The Resilience of Labrosones in Coastal Communities Bordering the Indian Ocean

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Clarion calls: a
call to war, a call
to warn, and a
call to mourn.
Proclaimed for
victory, signalled
for battle,
symbolic of
culture, played to
worship, and
herald to praise.
Blasted in the
fields, blared in
the festivals,
blown in the
synagogues, and
synonymous to
the courts.
Sacred to the
rituals, symbolic
to the carnivals,
gendered by men,
bellowed for
royals, and
adopted for
signals.
Constructed with
shells, made from
vegetables,
gutted from the
sables, and
hunted from the
cattle.
It is the sound
played through
the Horn.

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Chapter 1

Introduction

Countless are the tales, endless are the histories, numerous are the events known to define and unveil the mysteries, the metaphors, the sacredness, the symbolism, and diverse utilities acknowledged with The Horn. With a long historical documentation, this sound-producing instrument is known to have progressed through changes at all levels (indigenous names, construction materials, functionality etc.) amongst cultures around the world. With each nation, society, and cultural community claiming its own legends and significance of The Horn, it is no doubt that the multilayered meanings and importance attached to it from peoples around the globe has made The Horn an instrument of enquiry in various fields of academia and the performing arts. To some anthropologists, it is perhaps a material culture, to some ethnomusicologists, it may be a sound-producing instrument, and to the historical musicologist, it could be classified as an 'aerophone'. To the hunter, it is a tool, to the King - part of his regalia, and to the Christians - an old relic that brought down the walls of Jericho. In rituals, it is the sound of the spirits, in the military - ammunition, and to the musicians, it is one of the many musical instruments revered for its dominating and defining sound. Clearly, The Horn, or simply the trumpet in many musical contexts, has garnered currents of meanings, scholarship and cultural history. Considering insights embodied in the works of scholars such as Montagu (1976-2018) and Fukui (1994), we have come to acknowledge that through the millennia, the functions and construction of these sound instruments have consistently changed and their significance to cultural practices, such as rituals and festivities, has placed a high value on their usage. These changes and their significance in sustaining cultural practices, are factors this thesis will argue to have contributed to the resilient nature of these horns.

In the context of this research, I am using the term 'resilience' in reference to the material strength, the socio-musical significance and historical trajectory of labrosones in coastal communities bordering the Indian Ocean. According to the revised Hornbostel-Sachs (1914)

classification of musical instruments by the MIMO[1] Consortium (2011), 'labrosone' is a generic term for lip-vibrated wind instruments classified under the Hornbostel-Sachs (1914) aerophone category. This generic term (labrosone) includes instruments such as horns and trumpets; the former are made from animal horns, such as kudus and other cattle, but rarely from human bones. The latter, trumpets, are derived from materials such as conch shells, vegetables, brass, plastic etc. These wind instruments can either be blown from the side or the tip end. Hence, they are technically referred to as 'end-blown' or 'side-blown' horns. In order to appreciate the relevance of these instruments, it is crucial to note that archaeological excavation has produced physical evidence that has shown horns and trumpets to be arguably among the oldest wind instruments that have defined historical events and cultural practices, further rendering them integral to world history.

The practical use and cultural significance of labrosones, such as the horns/trumpets at the centre of this study, varies dramatically across the globe and within the African continent: from the trumpets excavated from the tomb of Pharaoh Tutankhamun of the 18th dynasty that were used to summon soldiers to war (Montagu 2014: 71, Kirby 1947: 33), to the *amakondere* royal horns used among the Baganda and Banyoro people of Uganda to celebrate wedding festivities and coronations of the kings (Nannyonga Tamusuza & Solomon 2012: 35). So also, are the variations ranging from the *ojembo erose* - a straight conical trumpet particular to the Himba people in Namibia that is used to herd cattle (Gibson 1962: 258), to the *aluut* of the Karamoja region in Uganda. The *aluut* is a side-blown animal horn used by herd boys to frighten away hyenas or other predators that might harm their cattle while grazing in the field (Trowell & Wachsmann 1953: 353). Another example is found amongst Asante people of Ghana, the a*kan* ivory trumpet - made from the tusk of an Elephant was used for ceremonial purposes (Kaminski 2012: 21). In the Christian Bible, an ensemble of horn players used the roaring sound of their horns to win the battle that brought down the wall of Jericho, and in medieval times, trumpeters were guarded highly by military units since they were crucial to relaying instructions over great distances (Joshua 6: 20, Judges 7: 23).

[1] Musical Instruments Museum Online

Trumpet playing within these cultural groups and throughout history occupied different roles. The sedimented associations that were attached to this activity proved vital in the social development of these cultural groups. It was more than just a musical activity, it was a special responsibility given to elite elders and carefully selected men, seldomly women, within these societies. Though some trumpets and horns had comparative similarities within cultural groups, their differences varied from their indigenous names, sizes and bore construction. These examples further buttress how trumpets and horns have gone through unique stages of transformation in terms of performance practice, social ideology and function, status and symbolism, gender norms, and bore construction. They have contributed to the cultural, political and musical landscape that have shaped, informed, and catalysed communities continentally. Montagu (2014) further argues that they are material objects integral to the world's history and for thousands of years the trumpet has played an essential role in almost every civilization on the planet. Central to my objective is to highlight these manifestations (both past and present) of labrosones. In addition to this, I will present factors that have contributed to their resilient nature and relevance till this present day. Finally, using this documentation, I will put forward the case for an instrument classification system beyond simply cataloguing and classification.

These goals emerge from my undergraduate studies, during which time I focused primarily on trumpet-teaching techniques and music-making with the trumpet. At this time, attention to its historical background and socio-musical roles fell outside of my research scope. With hindsight, this lacuna has poised this academic investigation to gather and present both findings and arguments from related scholarship that highlight the distribution of these labrosones throughout the research region. Through mapping and presentation of the regional distribution of these labrosones, a theoretical discourse guided by insights from scholarly works such as Bates (2012), Dawe (2012), Doubleday (2008), and Binford (1972) will be adopted as lenses through which to view and acknowledge:

(1) the multilayered names, functions, aesthetic and technical preference, ethos and meanings these labrosones acquire as they travel along the research region.

(2) how their socio-musical significance in sustaining cultural traditions in these regions have equipped them with the capacity to be symbolic, hold a significant degree of power and agency, and to demonstrate how they have been gendered through socially constructed ideas of gender.

The above scholarship has been utilized as thinking tools to help engage and understand how these instruments have come to possess these capacities, so much so that they have become worthy objects of scholarly inquiry within fields of academia such as ethnomusicology and anthropology. Consequently, within these fields a plethora of scholarship abounds, various meanings have been adopted, and a continuous string of theories continue to be applied. From the critically acclaimed work of Bennett (2010) to Bates (2012), these instruments have been interpreted through multiple lenses: the former explores the material agency and latent potential of a material object (i.e. labrosones), while the latter outlines and argues for us to study the social life of musical instruments. Dawe (2012: 1) defines musical instruments (i.e. horns and trumpet) in a way that simply could not be put more clearly, as:

> "*A musical instrument is much more than the sum of its parts. It can be measured and weighed, its acoustic properties investigated, the ecology of its wood documented, its metals sourced, the site of its sound activation identified, and its sound spectrum plotted. However, made to be played, whether one person's noise or another person's music, when musical instruments sound out they are invariably made to make meaning (changing soundscapes, affecting emotions, moving bodies, demarcating identities, mobilizing ideas, demonstrating beliefs, motioning values), which in turn, makes them potent social and cultural phenomena. As sites of meaning construction, musical instruments are embodiments of culturally based belief and value systems, an artistic and scientific legacy, a part of the political economy attuned by, or the outcome of, a range of associated ideas, concepts and practical skills: they are one way in which cultural and social identity (a sense of self in relation to others, making sense of one's place in the order of things) is constructed and maintained*"

These ideas of instruments embedded in their multilayered meanings have also been echoed through earlier works such as Doubleday (2008: 3) and Kartomi (1990). The former asserts that "instruments are significant cultural artefacts invested with a wide range of meanings and powers; to possess or play one is to wield power". Through their presence and through the sounds they produce, they have a special ability to transform consciousness, to embody

metaphors and to mediate their player's affect. The latter posits that musical instruments are objects made of varied materials that are often symbolic of cultural traditions unique to a group of people. Their sounds carry subjective meanings interpreted through an internal logic peculiar to members of these cultural traditions (Geertz 1973).

Using these insights stated thus far as an intellectual foundation, the thesis takes a Musicological turn in the 4th chapter to engage and expand Eurocentric ideas propelled and normalised in post-positivist paradigms, which I argue have shaped and continue to shape how the term 'organology'[2] is conceived. To this I offer the suggestion of using a broader approach to its systematic method embedded in the classification schemes of V. Mahilion (1880) and Hornbostel-Sachs (1914). Perhaps by engaging newer methodologies highlighted in organological scholarship from 1932-2017, an organology beyond cataloguing and classification can be achieved, offering a symbolic classificatory scheme with the capacity to move organology's prior universalist ideology, to a culturally situated and inclusive one.

The layout of the thesis begins with the introduction as has been presented from (p. 7-11). This introduction can be viewed as an overture, reminiscent of the instrumental prologue of G.F Handel's oratorio. Though void of musical notations, its essence has been presented through a narrative literary style corroborated with scholarly insights. My intention here is to capture the historical manifestation and diverse ideas associated with horns and trumpets through creative mediums whilst adhering to scholarly styles of writing a master's thesis. Perhaps this will assist in facilitating comprehension and guide readers into the thesis' **objectives** and **questions**; its adopted **methodology** in order to achieve them; and how each approach fits within the framework of the research's **paradigm**. With these sections established, the thesis proceeds into the literature review and presents the intellectual parameters of the research's conceptual frameworks, showing the ways in which they have been adopted, before finally embarking on a contextual journey into the body of the thesis.

[2]The research field that has traditionally dealt with the systematic study and classification of musical instruments, more broadly, sound producing instruments is called 'Organology' (Magnusson 2017)

Research Objectives

- To present an overview of conchshell trumpet distribution along coastal communities bordering the Indian Ocean; simultaneously highlighting cultural traditions that have made these horns significant to sustaining the social fabrics of their coastal communities.
- To expand the socio-musical canon of these indigenous horns through engaging Bates' (2012) notion on the social life of sound producing instruments; further taking them away from their exotic museum status to that which is still relevant both in social and present performance context.
- To argue for and suggest a broader methodological approach to organology, further expanding its statutory scope beyond cataloguing and classification.

Research Outcomes

- To contribute to scholarship that argues for a broader organology scheme, one that acknowledges both the agency and symbolic nature of instruments ordered within the scheme.
- To contribute further academic content to labrosone pedagogy and practical studies at tertiary level by re-evaluating their relevance and linking the past to the present.
- To contribute to the scholarship aims of the Re-centring AfroAsia project: The project aims to research, archive, collect musical and poetic records that can be traced through Swahili, Hindi, Mandarin, (Indian Ocean communities, or anywhere possible) sources.

Research Questions and Methodology

To research, to investigate or to unpack, these are synonyms often used in academic context and other formal institutions to describe enquiry procedures that researchers adopt in order to explain a phenomenon. A careful syllabic breakdown of the term research (re and search) is composed of a prefix and a verb; with the former meaning again, anew or over again and the latter implying to test, to probe, to carefully examine. Insights from Grinnell (1993: 4) presents a summation of these meanings by arguing that, "together they form a noun describing a careful, systematic, patient study and investigation in some field of knowledge, undertaken to establish facts or principles". These expectations and technical aspects of any research are solely tied to the efficiency of its adopted method of data extraction; as it also gives credibility and validity to its overall outcome. The necessary data can either be historical documentation, scholarly insights, participant testimony and practical examples needed to give context and drive critical arguments the research intends to write up. As has been articulated in research methodology studies within academia, there are multiple ways to which this aspect can be justified. According to Kumar (2019: 5), research methods could stem from the fairly informal, grounded upon 'clinical impressions', to the strictly scientific, which adheres to the "conventional expectations of scientific procedures".

Research Questions

1	How can the "resilient nature" of labrosones (horns and trumpets) distributed along the region understudy be acknowledged, unpacked and presented contextually for either academic discourse or practical purposes?
2	How can an organology beyond cataloguing and classification be presented in order to capture the historical trajectory, socio-musical significance, cultural symbolism and material agency of labrosones in this region, if these factors have undeniably contributed to their resilient nature till this present day?
3	Why are sound-producing instruments integral to sustaining cultural practices, which without cultural communities cited within the study will not have garnered the uniqueness that has made them worthy of study.
4	Who are the peoples, the community whose traditions and daily lives are sustained

	by the multifunctional use of these labrosones? Who are the scholars that have carried out similar research and what is the nature and extent of data which already exist on the phenomenon at the centre of my research?

Methodology

With these questions situated at the heart of the research and as the foundation for the contribution to academic knowledge and beyond, the preferred methodology for extracting the data necessary to answer these questions will be explored. Considering the nature of the research questions and the research objectives (p. 12), the chosen methods for achieving these have relied primarily on secondary sources of data (i.e. journal articles and published books in the relative field of study). Utilised too were original archival records and sources accessed in collections such as The Kirby Collection, Musical Instruments Museum Online (MIMO). The Kirby collection housed at the South African College of Music is host to one of the largest existing collections of indigenous instruments from parts of Africa and Asia, in Cape Town, while MIMO, is a virtual musical instrument museum with a collection that spans across the globe.

This method of data collection involved a broad range of applied activities that facilitated the investigation of documents and textual materials that were produced by and about organizations, scholars and institutions (Ventresca & Mohr 2002: 2). A key advantage of this method of data collection is that it provides the researcher with assistance in the form of textual materials or sound recordings and is generally regarded as economical and time saving. With regards to this research, The Kirby Collection, MIMO and a plethora of published scholarly works, which were readily accessible via UCT libraries and online journal publication, provided the research with significant intelligible data on labrosones created and collected in both recent and historic past. The data retrieved from these archival sources were contrasted with secondary sources (libraries and published literature within the field of research) through diligent investigation and methodological analysis. Considering the nature of both the research's question and objective, the need to broaden my search beyond ethnomusicology into the fields of anthropology, sociology, and musicology was apparent.

This allowed for an intersection of conceptual theories, further strengthening the case for an interdisciplinary study.

Despite the advantages ascribed to this methodology, scholars have called for researchers to be aware of its limitations. According to Sparrow (2012) and Kumar (2019), secondary data may be economical, save time and physical efforts due to its readiness and accessibility. However, there are certain limitations (validity and reliability, accessibility, format) that might hinder the realization of specific aims and objectives of the current research. For example, this secondary data would have been collected deliberately and interpreted in ways that are subjected to a particular research framework and research objectives, hence its adoption within the present research may be compromised due to these factors.

Considering these concerns, the secondary data used in this research were vital to achieve the research objectives. What became apparent was the difference in socio-historical time the research from which I was drawing was carried out. For example, documentation of changed or current social roles of labrosones and their symbolism within the area of study would have been corroborated with fieldwork investigations. However, regarding this research, it is imperative to state that this timeline limitation does not jeopardise the authenticity of the secondary data presented on these labrosones. This research is an ongoing study that requires further investigation. In my PhD research, I hope to undertake different methodologies in order to better address the research limitations.

In order to fulfil the practical requirement of a MA thesis by coursework and to achieve particular research objectives[3], I performed two recitals. These were based on music written for these horns and poetry performances that also incorporated them. An excerpt from the program note follows below; this includes questions that informed the recital.

[3] To expand the socio-musical canon of these indigenous horns through engaging Bates' (2012) notion on the social life of sound producing instruments; further taking them away from their exotic museum status to that which is still relevant both in social and present performance context.

Recital Concepts

My aim is to decontextualize and engage ideas of indigenous instruments. With these recitals, (14th & 20th November 2019) I seek to incorporate horns made from conchshells and the greater Kudu within a performance context of other instrumental ensembles and music technology. Through literary genres such poetry and storytelling, and musical hocketing techniques, a re-evaluation of their capabilities will be brought to life. Exploring the labrosones in this alternative performance context can further expand static and archaic ideas of indigenous instruments, entangled in the misinformed social circles of museum collectors and other repositories.

Questions informing the performances:

1. How can we expand the performance canon of indigenous instruments?
2. Can we engage, within a performance context, practical ideas on how to decontextualize what is said to be exotic about these labrosones?
3. Can this intimate and informed recital context give life to these labrosones by re-telling their stories, and highlighting their significance to the social fabrics of communities known to have adopted and prioritized the use of these instruments?
4. Can we re-evaluate them, redefine their relevance, and reposition their role within other instrumental ensembles and with new music technologies?

By adopting an empirical approach, both in their classificatory process and performance context, this thesis highlights deeper layers of meaning embodied by indigenous instruments. This research is an ongoing attempt to unpack and explain factors that have contributed to the resilient nature of labrosones, and how these factors can be significant, giving context to an organology beyond cataloguing and classification.

Critical in choosing a particular method of data collection is being aware of the objective behind collecting the actual data, and ultimately asking, Does it answer the questions and thicken the arguments? The resources available to the researcher and the skill of the researcher in using a particular method of data collection influences the outcomes of the research. Hence, each method should be conceived of as a process that comes with specific advantages and disadvantages, each being appropriate for certain situations (Kumar 2019).

Furthermore, though the efficiency of the chosen methodology is imperative to justifying the quality of the data, no particular method should be conceived as being without limitation; in Kumar's words, "guaranteeing 100 percent accurate data." Kumar further concludes that, "the quality of your data is dependent upon several methodological, situational and respondent-related factors and your ability as a researcher lies in either controlling or minimising the effect of these factors in the process of data collection" (p .165).

Research Paradigm

Kumar's critical view and concluding argument on the efficiency of any chosen research methodology can be argued as being rooted in the philosophical ideas embodied in pragmatism, a philosophical paradigm that has also been adopted as the fundamental ideology in which this research is rooted. Pragmatism, as a philosophy, was pioneered and associated with the American philosopher, psychologist and educational reformer John Dewey. He sought to promote and reorient philosophy away from abstract concerns by turning it instead towards an emphasis on human experience. In other words, what we refer to as knowledge is based upon and influenced by our subjective view and understanding of how we see the world through the lens of social interactions and cultural institutions.

As a research paradigm, it has no place in the continuous metaphysical concepts such as truth and reality, rather its constellation of thoughts accept that there can be a single or multiple realities that are open to empirical inquiry (Creswell & Clark 2011). Though it is often narrowly conceived of as being appropriate for a mixed method research, beyond this, the paradigm justifies the positioning of the research questions and objectives at the centre of the research. Hence, the researcher is endowed with tools to subjectively and critically question, comprehend the data collected through the application of the chosen methods.

Pragmatism compels the researcher to be aware and perhaps, with regards to this research - unveil the different layers of meaning often hidden in the conceptualisation of theories, cultural traditions, and ideas of sound-producing objects (i.e. labrosones) relative to the region of study. Furthermore, this research is an interdisciplinary research that seeks to combine both theories, methods and literature from ethnomusicology, musicology and

anthropology. Hence, the use of pragmatism encourages the intersection of theoretical insights, embraces a plurality of methods, and adopts literature as tools of thinking and analysis in order to answer the research questions and achieve the research objectives. In what follows, I present the reviewed literature and conceptual framework of the research and how these have been applied to give context and drive critical arguments within the research.

Chapter 2

Literature Review and Conceptual Framework

This section of the research seeks to inform the reader on how conceptual ideas borrowed and conceived within the intellectual parameters of the reviewed literature, will be adopted to achieve the research's objectives, and attempt answering its questions. The chapter has also been chronologically situated in this section of the dissertation in order to form an introductory tool to establish the interdisciplinary nature of the research; bringing together a community of scholars and intersecting their ideas. In What follows, I present five conceptual frameworks that have been adopted as lenses through which the reader can better engage ideas such as; the socio-musical significance and symbolic capacities of labrosones; and why their appreciation is vital in achieving an organology beyond cataloguing and classification.

Gender and The Gendered Nature of Conchshell Trumpets.

The concept of gender manifests as the socially and culturally constructed meanings and differences between masculinity and femininity (Holmes 2007). In other words, it is a performative act that embodies an elusive and constantly contested meaning, influenced by social and cultural factors (belief systems, politics, power relations, cultural institutions and traditions). Hence, these meanings, differences and factors determine: (1) the behavioural expectations of masculinity and femininity, and (2) the significant social roles imposed upon each gender category, which are in turn played out within diverse societies. At the intellectual nucleus of this sociological redefinition is society: a contested field structured and constitutionally shaped through traditions practiced and maintained by its cultural institutions. Theoretically, the context, which influences the ideas of gender engaged within this thesis, is a particular community or society that continuously reconstructs and renegotiates the ideas of gender, its performative components and its stylized repetition of bodily gestures subjected to tradition. An example of the above position is found in the ethnographic scholarship on the Baganda peoples of Uganda by Nannyonga-Tamusuza (2005). This comparative study unpacks how beliefs held by a society and the traditions

practiced by the diverse groups of people that embody it, further contributes to the idea of gender being “cultural and time specific” (15).

Buganda, the kingdom of the Ganda people, is the largest of the traditional kingdoms in present-day Uganda, comprising all of Uganda's Central Region, including the Ugandan capital Kampala. Ideas of gender in this society are not only defined biologically but also in relation to the palace through association, belonging or proximity (Nannyonga-Tamusuza 2005). The definition goes further to point out two major factors that shape the ideas of gender in Uganda: “on the one hand, biological and cultural factors shape gender identities, roles and relations”, this is referred to as ‘biocultural’. “On the other hand, social class, as structured by the Baganda, defines one’s gender identity, role and relations”, this she refers to as ‘sociocultural construction’ (Nannyonga-Tamusuza 2005: 16).

Social roles and life expectations for male and female, which in turn define the degree of relation between them are determined by one’s age and sex within the Baganda context (i.e. drumming for male and dancing for female). According to Nannyonga-Tamusuza (2005), another example is found with women outside the palace context who defy this social norm and as a result, automatically lose their female gender. Walser (1982: 285) further states that, this person becomes “*nnakawanga* (she-cock) or *nnabyewanga,* a proverb that states, “*nnabyewanga: ng’akaliga akaliira mu nte”,* translating to; ‘a pretentious person, like a lamb that gazes amongst the cows’. A woman is equated to a lamb, while a man is equated with a cow. In other words, if a woman tries to do what is socially designated for men it is a lie, because a female outside the palace can never become as great as a man (Nannyonga-Tamusuza 2005).

The above sociological approach to the concept of gender will be thickened with insights from Qureshi (1994) and Doubleday (2008). The former highlights the capacity of instruments to carry cultural associations with gendered deities or spirits, which are often transmitted through indigenously held beliefs, legends, myths, songs and rituals. While the latter unpacks practices of social roles that determine which gender group is suitable to carry out a given chore or activity. These ideas of gender have been adopted within the thesis as a theoretical

lens through which to view and engage the gendered nature of significant labrosones (i.e. conchshell trumpets) within the coastal communities in the study region. In other words, ideas informed by this literature will guide the subsequent discussions and arguments of how the physical manifestation of gender ideologies have directly shaped human identity, its interactions and relations within the sociocultural context of the coastal communities bordering the Indian Ocean. The thesis will use this as an approach to discuss how the social roles attached to gender identities become a determinant for granting accessibility to specific labrosones such as the conchshell trumpets.

Material Culture

The literature utilized in this section of the thesis reflects the interdisciplinary nature of this research. It stretches beyond theoretical concepts known within the field of ethnomusicology, into the theoretical concepts of material culture established within the field of anthropology. This is first established in the ideas of culture embodied in the works of early American anthropologists, Clifford Geertz and his colleagues at the University of Chicago, and Victor Turner at Cornell. Together they pioneered the movement of 'Symbolic Anthropology' that was prominent at the beginning of the nineteen sixties. Although this movement had two major variants[4], one thing they achieved despite their differences was to put the understanding of symbols as a key aspect within the interpretation of both culture and its society.

These symbols, as argued by Patnaik (1994) and Binford (1972) are often embodied by tangible objects, physical places, and traditions that are significant to diverse cultural communities. While Patnaik (1994) states that the categorization of culture into material and non-material dimensions has been vital to understanding the symbolic capacity of material culture, Binford (1972) argues that material culture can and does arguably represent the structure of the total cultural system. Binford further synthesized three major functional subclasses of material culture (technomic, sociotechnic, ideotechnic). These concepts will be

[4] 1) The operations of culture and (2) the operations of society, which were independently invented (Ortner, 1984).

exemplified in chapter(3) through examples drawn from the distribution study which presents the socio-musical significance of the conchshell trumpet in the study region. Insights drawn from these works, amongst others have been engaged and applied in order to answer one of the research questions, namely; how have these instruments become symbolic of specific cultural traditions within the area of study? These ideas have been considered within this research to acknowledge the conchshell beyond the material scope of a sea animal skeleton washed up on shores and used to relay signals. Rather, by drawing upon these ideas, we can understand it as a sound-producing material culture capable of retaining and reflecting ideas, values, and traditions that define a collective of people.

Thing Power and Material Agency

This section highlights how the socio-musical significance and cultural symbolism of labrosones entangle these sound-producing objects in webs of complex relationships that equip them with the potential to hold a significant degree of power for action and intervention. Montagu's (2018) ethnography of conchshell trumpets not only documents specific cultural interactions and traditions associated with them but further explains the high degree of social significance given to conchshell trumpets in both coastal and inland communities around the world. Fukui's (1994) provides a historical documentation of a symbolic conchshell trumpet locally referred to as the *hora* in Japan that dates the usage of the horn as far back as the Nara era (A.D. 710 - 794. Fischer's (1986) account documents indigenous names, specific usages, folklores, myths and beliefs associated with the conch in the islands of Micronesia, Melanesia and Polynesia. Practical examples from these ethnographic accounts provide material evidence of the latent agentive power and potential of a material object, in this case - the conchshell trumpet.

It is useful to view the above ethnographic accounts through the theoretical lens that Bates (2012: 371) provides, who argues for a "paradigm that encompasses the full range of possible human-object-divine relations, as exemplified in instrument making, performance, musical healing, and numerous other domains". A paradigm such as this positions the material object as a central subject of study and unpacks ideas such as: (1) how human intention is exerted onto material objects (i.e. labrosones) in order to initiate action and project emotion; (2) the

performative and integrative capacity of material objects in diverse contexts; and (3) how a material object's significance and symbolic capacity align to enable its value beyond its material properties. Furthermore, Bennett's (2010: 9) concept of 'thing-power' describes material agency as "agency beyond an inherent capacity only held by humans, but rather something seen as differentially distributed across a wide range of ontological types" (2010: 9). These concepts are adopted within the research to enable readers to imagine labrosones and other socially and culturally significant material objects as constitutive - not incidental - of a social structure.

Organology

Organology scholarship from the period from 1890 to 2017 has been adopted as an intellectual framework within this thesis. Various theories and ideologies have consistently shaped both scholarship and application of the term within the field of musicology and its application in depositories such as museums. Central to the objectives of organology scholarship from the 1950's argued for a symbolic and contextual approach via ethnography, anthropology and musicology. This symbolized a move away from organology's prior universalist ideology, embodied in the Hornbostel-Sachs (1914) musical instrument classification scheme, towards an inter/intra culturally inclusive status.

In other words, a call was made for an empirical classification scheme that takes into account socio-musical references and indigenous concepts of instrument classification that gives these labrosones significance within the area of study. Arguably, this approach will broaden organology's static and curated ideas, shifting its attitude from objectification, towards conceiving of labrosones as socially significant sound material culture, with the capacity to interpret practices (rituals, festivals, ceremonies) that have preserved traditions within the area of study.

Two significant trends that challenged narrow ideologies of organology in the early 1960s include criticisms from Kurt (1959), which revealed the bias and condescending nature of Sachs' comparative studies on instruments and Merriam (1964) that encouraged scholars to

generate fully contextual studies of music including musical instruments. Arguably, this scholarship made space for other scholars[5] who sought to narrow the detailed study of particular instruments and ensembles. These works shed light upon the social context, as well as acoustic, morphological, biological, and historical aspects of instruments (Kartomi 1990). The latent potential in a cultural material, such as labrosones, to possess humans and facilitate a deeper relation with its player, its society and makers have been critically analysed and documented within currents of ethnomusicological scholarship[6]. Specifically, Dawe's (2007: 114) research on the Greek island of Crete focused on a small fiddle called the *Lyra.* Dawe argued for a broader understanding within ethnomusicology to conceive of musical instruments as culture. Considering Dawe's argument, it has become imperative for ethnomusicologists to take objects, particularly musical instruments seriously: not simply as lifeless or objectified elements acquired by actors within a society, or by collectors in a museum, but as significant cultural elements that have the potential to garner power and embody spatial history peculiar to a society.

Perhaps one of the most significant pleas for a broader ethnographic investigation into the study of musical instruments surfaced in the 1990 issue of UCLA's[7] *Selected Reports in Ethnomusicology,* edited by Sue DeVale. This critical edition of 'Organology' advocated for a redefined classification purpose that would further unpack and explain society and culture (1990: 22) within the context of organology. The edition put forward a classificatory, analytic and applied approach to organology and identified how these three approaches could overlap in the process of application. Using insights from these works, this thesis seeks to present a discussion on newer methods and broader objectives on organology in order to develop an empirical classification scheme with the capacity that helps explain society and culture.

[5] Elschek (1969) Montagu and Burton (1971), Ramey (1974), Heyde (1975), Hartmann (1978), Sakurai (1980/1) Douron (1992) Montagu (1996): though these scholars approaches vary, however insights from their ingenious works have theoretically aligned to thicken the ideas of a contextual organology.

[6] Bates (2012), Qureshi and Dawe (2000), Doubleday (2008), Berliner (1974)

[7] University of California, Los Angeles

Oral and Literary Orientation

Insights from Finnegan's (1980: 16-22) book on oral poetry states that the meaning of the term "oral" is far from self-evident; its usage and interpretation are relative and often ambiguous. Finnegan asks a critical question on the neutrality or authenticity of oral communication which later becomes a written one: "does the fact of its having been recorded in writing make it no longer oral"? To Finnegan, relativity and ambiguity are part of nature and facts, and to try and conceal this by using a brief definition would be misleading. Perhaps what is central to Finnegan's argument is how the plurality or relativity of certain terms are often subdued by hegemonic definitions and narratives, which consequently give priority to dominating views, rather than allowing for the inclusion of other relative views. It therefore becomes important for scholars to avoid embracing definitions of terms or concepts as absolute statements regardless of their pioneers. Rather, we should allow for a more relative discourse of terms and concepts, an approach that can perhaps limit brief and reductionist definitions that have the potential to be misleading.

With this established, this thesis moves forward by echoing Finnegan's submission on this argument via Kartomi (1990: 10), who posits that, "oral and written culture should be viewed as the ends of a continuum ranging from the non-literate, through the partly literate, to the mass literate". Arguably, we can establish that "even mass literate cultures normally have some orally created and transmitted communications", and perhaps a basic point of departure here, "is the continuity of oral and written literature in literate societies". Efforts to create a lacuna between these two terms is not an objective of this thesis, rather I seek to highlight the point of intersection; just as Finnegan points to cases of poetry that have both oral and written elements.

Using Finnegan's argument as an intellectual guideline, classifications of musical instruments are sometimes both oral and literary in their transmissions. The ancient eightfold Chinese *Pa yin* classification of instruments according to their material is a practical example of a society's means of transmission that is both oral and written. According to Needham and Robinson (1962: 142), this ancient written scheme as we know it today, arrived gradually from an oral tradition. It is believed to have existed from the twenty-third century BCE in the

time of the legendary Emperor Shun. However, other evidence indicates a similar fourfold scheme based on materials from which the instruments were made coexisted with the eightfold scheme in the ancient period. Insight from this work further asserts that the *Pa Yin* classification was perhaps written down various times in the middle ancient period and even in the late historical period. It was conceived as an oral tradition but was transmitted over the centuries both orally and in written form[8]. At this point we can consider the authenticity of societies formerly referred to as being literate. For only rarely can we speak of purely oral or purely written cultures, if we embrace the position of both Finnegan and this thesis.

For more clarity, we must also acknowledge that some cultures communicate only certain information orally, some only in writing and a unique few adopt both methods of transmission. We can also argue that while written transmissions do allow for some quasi-stability or rigidity, oral transmissions also hold this potential through methods embedded in traditions known to a cultural community (i.e. folk tales, poetry and ritual offerings). Further, we can also establish that both are vulnerable to over-exaggeration, misinterpretation, or worse – being misplaced. Hence this thesis holds the view that there are really no substantial differences between orally and literary transmitted schemes. With regards to the distinctions highlighted above, it is therefore important for the purposes of this thesis to retain the expression 'oral orientation' and 'literary orientation' as working terms.

The two categories will be used as the two ends of a continuum, even though the usefulness of the distinctions remains. As Kartomi (1990: 12) points out, "we need to employ different research methods when eliciting data about classifications in cultures with an oral as opposed to a literary orientation"; hence the retention of these terms within this thesis. "Research into classification in orally oriented cultures requires field work while research into schemes transmitted in the literary mode necessitates library research". The 4th chapter of this thesis is a theoretical discourse on organology and classification schemes that may be able to expand beyond the canon of a systematic approach, to that which is empirical and situated. Content within the chapter has been collected through secondary sources, limited to classificatory schemes from literary oriented societies from Asia and Europe. In future research, schemes from orally oriented societies can also be discussed.

[8] see also Kartomi 1990

In conclusion, with regards to the literature reviewed in this section and those that will be cited in later sections of the thesis; though these scholarships are appreciated as intellectual authorities and useful tools of thinking, however they are equally seen as fallible sources. This position has carefully been considered based on the philosophical positioning of this research. Thus, in order to engage this challenge the thesis has adopted an interdisciplinary approach to its methodology and scholarship; further corroborating related ideas to validate each adopted conceptual framework.

Chapter 3

Conchshell Trumpets

A wide variety of shelled animals categorized under different classes[9] are known to flourish in bodies of water and swampy regions around the world. These shells function both as the external skeleton and home to this group of organisms but take on other artistic and pragmatic uses outside of their natural contexts. Of all these classes of shells, the one relevant to this study is the Gastropod[10] as they are the only shells of this class that are large enough to be used as trumpets. According to Montagu (2018), Gastropods are known to prefer warmer waters, hence they seem to thrive in the central belt of the world's oceanic communities. Clearly this is a vast region and therefore practically impossible to study within a single research project. So, considering the geographical interest of this thesis and that of the RAA's project, the research areas covered will be coastal communities that border the Indian Ocean.

Marine shells are one of the earliest material objects[11] that have been used as trumpets. Their frequency is prolific in coastal communities[12] along the Indian Ocean and though their frequency reduces further inland, their economic value, religious importance and multi-layered functionality prevails. Their significance as instruments crucial for signalling, ritual processes and magic is stronger amongst oceanic communities. Hence, the geographical research scope of this thesis will be limited to coastal communities in East Africa and further coastal communities in south-east Asia bordering the Indian Ocean.

It is generally accepted that conchshell trumpets are the earliest form of trumpet, and of the many roles these trumpets are said to occupy, the primary ones can be classified as: (1) an important instrument of worship in religious practices such as Hinduism and Buddhism; (2) a ceremonial instrument for occasions, such as initiations and funeral processions of royals; (3) a war trumpet in the military; (4) a signalling tool amongst fisher communities, i.e. as

[9] Bivalvia, Polyplacophora, Cephalopoda, Scaphopoda, Gastropoda

[10] Invertebrates that walk using their stomach as a foot while carrying their helical shells on their back (Brusca, R. C.; Brusca, G. J. 2003).

[11] dating as far back as the New Stone Age (Jackson 1917,p.35; Schechter & McLean 1984)

[12] i.e. the easterly regions in East Africa, Europe, around the Mediterranean, South-East Asia, Oceania and the Americas

foghorns (Montangu, 2014, 2018. Fukui, 1994). For clarification, the term “Conch-shell” is tautological, given that the word ‘conch’ means shell and derives from the Greek *kanche* or *konchos* and Sanskrit *conkha*, hence the most commonly used word at present is; conchshell trumpet.

In what follows, I present a survey on conchshell trumpet distribution. This will be contextualised with theoretical narratives based on Bates’ (2012) notion of studying the social life of musical instruments, Doubleday’s (2008) outlining of salient issues relating to musical instrument and gender, and Binford’s (1972) assertion of the three major functional subclasses of material culture. Further, these and other related works will be used as intellectual guidelines used to explore themes such as ‘thing-power’ (Bates 2012), material agency and the gendered nature of the conchshell trumpet, and the conchshell trumpet as a material culture.

Distribution of Conchshell Trumpets in Coastal Communities in East Africa and along the Indian Ocean

Though the literature is sparse, use of the conchshell trumpet has been documented along the eastern coast of the African continent, running from southern Somalia, Kenya, Tanzania and Madagascar, and all reports indicate the use of a side-blown version. Accounts from Sir Kenneth Oakley in Montagu (2018: 43) reveal that side-blown *Bursa* conchs made from a frog shell (fig. 1) were blown with a hand-stopping technique with the bell facing backwards. These were blown to signal the beginning and ending of a fish haul in Kenya by boatmen at the Mtwapi and Kilifi hand-held ferries between Mombasa and Gedi.

East Africa

The conchs in Tanzania are identical to that of Kenya and Montagu states that these frog shells are from Mafia Island off the coast of Tanzania, opposite the Ufiji River delta. They too are used by boatmen as a foghorn and again, are side-blown but with rather irregular pecked embouchures at the back so that the open mouth faces forward, away from the player. This is unlike the Kenyan example. On the island of Madagascar, conchshell trumpets are popular sound producing instruments amongst every tribe. According to Sachs (1938), these horns

are only accessible to men and restricted from women due to traditions and beliefs popular on the island. This aspect will be considered later in the thesis in order to reveal how cultural traditions contribute to the ways in which instruments are gendered[13].

Often the horn is used in sacred contexts, especially in burial processions of princes and ancestral cult members, during circumcision rites, to cure illness and to appease spirits while at sea. Thus, the conch shells here have a dual role, that of signalling and magic. Linton (1933: 268) also provides an account of the use of triton shells known locally as *antsiva* (fig. 2) in the Malagasy Islands, and the account states that these shells were imported from the eastern coast and are highly valued. This assertion, of the conch being imported into Tanzania and Malagasy island, implies and echoes the somewhat outmoded cultural diffusionist paradigm popular between 1787 and the 1930s. This type of movement, I argue, is debatable in the context of the conch in both coastal communities. The availability of these shells in waters bordering these two communities and the ease of construction are two reasons to doubt the importation of these conch shells, an issue I expand upon at the end of the distribution overview. That said, the significance of these horns is clear, considering how crucial they are to ceremonial occasions, funeral processions, ritual offering and for alarm signalling.

Moving further east, northward towards the Indian Ocean (Persian Gulf, South-Asia, South-East Asia), the conchshell trumpets in this region are mostly end-blown. This technique is adopted widely around the world compared to the side-blown technique common to East Africa and to some rare examples in South-East Asia. It is also important to state that due to speculations regarding the first use of conchs in any given part of the world, this thesis has adopted a geographical approach to the distribution rather than historical, since we do know where they were first used or at least where they were first found.

Persian Gulf

Along the Omani coast, *Strombus, Cymatium, Bursa,* (fig. 3) are examples of gastropods species used in making conchshell trumpet for both signalling and ceremonial purposes.

[13] A further example of the gendered nature is revealed through Ellis (1858: 399), who describes the nature and performance context where men use the horns to accompany the women's soft and monotonous singing. This is rather a rare occasion according to Ellis, because the conch on the island are seldom used for entertainment for they are believed to be magical instruments.

These trumpets are blown amongst the Basra people (a black population in Iraq), and are most often played by older men to accompany a variety of sailors' songs, and dances.

South-Asia: India, Sri Lanka. East-Asia: China.

In the whole subcontinent of India[14] and monasteries in Tibet, the continuous use of the conchshell trumpet for several millennia has been attributed to its religious significance to the practice of Hinduism and Buddhism in these regions; going back at least between 600 AD and 150 BC (Montagu 2014: 29, Yuan & Mao, 1986: 83). According to references from *Bhagavad-Gita*, and other Hindu scriptures and legends, each hero from these Holy Scriptures has his famous conch with its own name, each of different species. Of these species, the *Turbinella Pyrum* (fig. 4) called *chank* in India (also known as the classic *chank* of the Vedas) was the most important of them all, so too was that of Vishnu and of his avatar Krishna (Hornel 1914: 119). In the *Vedas,* the conch is a war trumpet, and its sound is attributed to the creation of the world. It is also believed that on the last day on earth, when the world is in flames, Shiva, one of the three major deities revered in Hinduism, will sound the conch (Sachs 1940). This represents the unusual dual nature of the conch-shell trumpet; to herald new beginnings and to announce a fatal end. The use of the *chank* in the subcontinent of India and Tibet seems more popular within sacred contexts, however, there are records that have stated other purposes such as signalling, magic, healing and entertainment by non-Buddhists and Hindus. Inscriptions of the *chank* on early coins in Ceylon, a region popularly referred to as a Buddhist island in Sri Lanka, also reveal how these shells are used for other social, economic, or political purposes (Montagu, 2018).

In the north and southwest of China there are accounts of various shapes and colours of shells used for sound production: (1) *Charonia Tritons*, a Pacific shell used for signalling by infantry soldiers and watermen in both regions; (2) *T.Pyrum,* from India, used by the Buddhist sect in the north called *Ying Fo* and by the *Nanman* (Aboriginal peoples of south-west China) for Buddhist music. The conch shell-trumpets in this region are mostly end-blown and

[14] Afghanistan, Pakistan, India, Bangladesh, Sri Lanka

accompanied by cymbals; here we observe how the conch can also be utilized within the context of an instrumental ensemble; and (3) *Hemifusus Colossus*, a gastropod known to flourish widely in Chinese waters and culturally preferred for making conch shell-trumpets in China, referred to locally as *Hailuo* (fig. 5). Here they are all end-blown horns used by boatmen in Chekiang and around Shanghai. Amongst the Naxis peoples in the western region of China, the conchshell trumpet *Hailuo* is also a sacred instrument believed to embody supernatural powers. This belief has attracted strict rules that determine when they might be played and which particular individual (i.e. *dongba,* a male indigenous *Naxis* priest) plays or touches the instrument (Hellen 2011: 56).

Here the restrictive access to playing the conch is even more exaggerated, since not only are women barred from playing, so too are men. It is only a designated male, referred to as the *naxis* priest that may play it, hence creating a social and gender hierarchy within the male category. This sub-categorization within a particular gender group highlights how the concept and categorization of gender in different societies varies due to unique cultural factors, such as religious practices and assigned social roles. To further illustrate this, I draw insight from Tamale (1999) and Nannyonga-Tamusuza (2005), gender theorists who both argue against the projection of the Western concept of gender onto other societies. Rather, they emphasize how religion, social class and roles, age, politics and sexuality constantly influence the ideas of gender and its categorization in non-Western societies, most importantly, how their physical manifestation is time and context specific. Perhaps we could adopt this position as an intellectual guide to engage how the strict and limited access to the conchshell trumpet among the Naxis people is a practical manifestation of the multilayered concept of gender and how its interpretation has the potential to imply a sub-categorization, even within the same gender group. In addition, we can use the example from China as evidence that shows how “the definition of gender is not static or absolute but rather continuously categorized, reconstructed and renegotiated, dependent on the performance context, cultural and political structure” (Nannyonga-Tamusuza (2005: 15).

South-East Asia: Thailand, Indonesia, Malaysia.

Moving east of the Indian Ocean towards south-east Asia, the sound of the Indian *chank T.Pyrum* travels along with the religious practice of Buddhism throughout Asia and is used as far north and inland as Mongolia (Yuan & Mao, 1986: 83). These horns are consistently played in pairs and adopt the end-blown technique with one right-turned and the other left-turned (Montagu, 2018: 75). In Thailand, accounts from Dhanit Yupho, through Montagu (2018: 76-77) reveal that an identical shell to that of the *T. Pyrum*, modeled after the Indian *chank*, called *sang* among the Thai people is a prominent conchshell trumpet significant to both sacred and secular traditions. The account states that it is used only in ceremonies of the highest dignity, honour and esteem and is played with other horns and trumpets and there is no mention of it being used for signalling or by commoners. Other examples I have discussed have implied that these conchs are mostly played as a solo sound-producing instrument or in an ensemble with instruments from the Membranophone category (i.e. drums) and are seldom paired with other similar or contrasting aerophones.

Indonesia is geographically located between the Indian and the Pacific Oceans and is a country characterized by its large number of islands, some of which border the Indian Ocean[15]. These regional features explain why it is home to a variety of oceanic animals that have been both culturally and economically valuable to traditions that have and arguably still define peoples in the country. In this context, of these oceanic animals, the gastropod species, *Charonia Triton* (fig. 6) is preferably used as a conchshell trumpet because it is widely distributed. It is most often played with a side-blown technique, and rarely with an end-blown technique. This particular gastropod species, when used as trumpet in south-east Asia assumes a variety of indigenous names as it travels through the region. In Bali, for example, the conchshell trumpet made from *charonia triton* shell is referred to as *sungu,* and *tuan-tuang* in the Suku Kelumu dialect, The Suku Sekak ethnic groups are known as 'the sea people' because they live on boats at sea in the Bangka and Belitung provinces on the east coast of Sumatra. In the north-central region of Sulawesi Island, inhabited by the Poso Toradju people, the same conch assumes a new name - *ntoeantoeangi*. Here, the conch shell-trumpets are blown only to warn neighbouring villagers of danger and to call the wind when

[15] Lesser Sunda Islands, Sumatra, Java

trees that have been felled to make way for fields are about to be burnt. Additionally, on the coast of Sulawesi it is customary to use the sound of the conchshell trumpet to summon the wind spirit to calm the seas in case of a storm.

According to Matusky Yamaguchi in Montagu (2018), the conchshell *C.Triton* is the preferred material for making trumpets in Malaysia. The conchshell was used in earlier times as a means of communication in ritual process and in the military. Furthermore, in the music museum in Kuala Lampur, the capital of Malaysia, Yamaguchi reveals that the conch is locally known as *Kome* and is argued to be imported from Serpoma, an eastern coastline of Sabah in the Malaysian part of the island of Borneo. On the island of Java, accounts of the usage of the conchshell trumpet are limited. However, some evidence of the conchshell's usage can be found in the form of visual depictions in the carvings on the great temples of Borobudur and similar monuments (Kandern 1917 - 1920, Kunst 1973, Montagu 2018).

Overview of Distribution Study

There is much scholarship with speculative arguments, and factors that are directly responsible for the survival of the conchshell, as a prehistoric trumpet, which to this day continues to be relevant in terms of its uses and functions. According to Jeremy Montagu (1981/2014/2017/2018), these trumpets may have survived this long historical period due to the following reasons: firstly, it is far easier to knock of the spire of a shell or drill a hole on its side compared to removing the point of a cow horn, a goat horn, or of an elephant tusk. Secondly these shells can readily be used as trumpet once washed upon the shore of any beach, with their inhabitants dead. Thirdly, we can argue for their association with the practice of Buddhism, Hinduism and other religious and sacred practices known since prehistoric times. For the fourth reason, they produce a warm, full and far-carrying tone, and lastly, because of the material resilience of the shell to decomposition, they even last longer when buried in the earth than wood or vegetable materials. This last reason is perhaps the most convincing of why the conchshell has been, and still is, culturally and economically relevant to these coastal communities.

In addition to presenting the geographic distribution of the conchshell trumpet along these oceanic communities, this section highlighted the role of instrumental ensembles, varying

traditions (sacred and secular) and the indigenous names locally used in referring to the conchshell trumpet. It has also presented supernatural beliefs and magical meanings associated with the acoustic properties of the conch. Additionally, the section has helped unpack the historical relevance, gendered nature, and diverse social factors that influence each performance context. These accounts reveal a commonality in functions such as signalling and music making, peculiarity in uses such as, wading and summoning of spirits, magic and healing, religious and ceremonial rites. The significance of the conchshell trumpet can therefore be valued further, not just as a sound-producing instrument but also as instruments socially significant and culturally symbolic of people who have occupied these coastal communities for millennia.

That being said, this section was not intended to fit in all the uses and functions, social beliefs, religious symbolism and indigenous names of the conchshell trumpet in these oceanic communities into a limited social paradigm. Rather, central to the objectives, was to present these findings as contextual evidence to argue for their inevitable social agency. In other words, there is a highlighting of the social circumstances that conditions sound producing objects (i.e. conchshell trumpets) to be entangled in webs of complex relationships between humans and objects, humans and humans and between objects and other objects (Bates 2012). Thus, the same conchshell trumpet in different socio-historical and sociocultural contexts is likely to be implicated in categorically different kinds of relations. For instance, the conch in the two coastal regions in East Africa (Tanzania and Kenya) assume different uses and functions when comparatively studied to conchs in the subcontinent of India and South-East Asia. This complex relation as it were, furthers the resilient and adaptable nature of the conchshell trumpet. A primary goal of this chapter was to construct a broader narrative and framework for unpacking the multi-layered meanings, the historical relevance, social significance, acoustic properties and associated beliefs that can be adopted to better tell the stories of the conchshell trumpet as it travels along these communities. According to Woodward (2009: 60), stories and narratives hold an instrument-object together, giving it cultural meaning and significance. Perhaps these stories can also be adopted to further contribute to a “lived organology” (Hooshmandrad 2004: 42) of the conchshell trumpet in these coastal communities. The next two chapters of this thesis seek to adopt insights from

this concept and other relative works on instrument classification, in order to contribute to current scholarship that argue for an organology in dialogue with society and culture.

While this is not intended to be a comprehensive comparative study, a major idea garnered from this distribution overview relates to the functionality and latent potential of the conch and whether these features are evidence of pre-colonial historical connections. It can be argued that conchs and similar horns are well suited for singling, it would be difficult to imagine them not being utilized in these ways and at multiple locations. However, these inevitable, multiple uses and functions of the conchshell that arise from its essential characteristics; its shape, positioning of the bell, the acoustic potentials of the material and its resilience to decomposition are alone insufficient to demonstrate pre-historical connections to, cultural exchanges with and/or influence between these communities. In what follows I present evidence to further buttress this argument.

Linton (1933: 268) provides an anthropological series on the Tanala (a hill tribe of Madagascar), giving an account of the use of Triton shells called *antsiva* (fig. 2), found on the Malagasy Islands. The account also states that these shells were imported from south-east Asia. I argue that this claim is subject to debate since these shells are available in waters of both regions and are easy to make an instrument such as the conchshell trumpet from them. Using the availability and common functions (i.e. as fog horns for signalling) as evidence is far too simple for such sensitive and substantial arguments that have garnered a variety of scholarship based on social diffusion and parallel evolution.

According to Fischer (1958/1983: 150), there are two possibilities for explaining the same function of a musical instrument or sound-producing material object found at multiple locations: an historical one and a psychological one. Historically, there are a variety of possibilities that could explain how these conchshell trumpets came into the cultural fabrics of these communities (i.e. East Africa to the Persian Gulf, India, China, and Southeast Asia) or (South East Asia to China, the Persian Gulf, and East Africa). These movements are open to further speculation if we engage factors responsible for the wide distribution of these trumpets across the oceanic communities, especially considering the prehistoric nature of the era in which the research is situated. The second possibility, from a psychological

perspective, posits that the innate acoustic properties lie in the instrument itself, its form or its sound texture. We can also establish that sound is vibration and is only ascribed meaning through human physiology and cognition. This scientific explanation makes the interpretation of the sound of the conch or its psychological impact on its listeners elusive and opened to interpretation, though sometimes these interpretations are similar. However, despite any similarities that might occur from the psychological impact or cultural phenomenon associated with an instrument, these conditions can still be viewed as coincidental manifestations. The ability of any living being to respond psychologically or physically to sound (either by giving attention, or showing excitement or pleasure) is not an exclusive behaviour but rather generally manifested.

Overall, based on the above evidence, this thesis argues that the coincidental function of the conchshell trumpet across these oceanic communities cannot solely be used as valid evidence for pre-historical connection or cultural exchange or influence between these communities. Though this argument can be delved into further, what seems to be relative to achieve the key objectives of this thesis, is to engage the following questions: can these similarities in functions or specific usages of the conchshell trumpet in these oceanic communities be summarized and used as contextual materials to better tell their diverse stories across the Indian Ocean communities? Furthermore, can the ethnographic details revealed through this distribution studies be adopted in presenting a contextual organology to better engage concepts such as: (1) the gendered nature of sound producing objects, adopting insights from Doubleday (2008), Koskoff (1996/97), Sylvia (2005), Kirkman (1996); (2) 'thing-power' and material agency, adopting insights from Bates (2012), Gell (1998), Appadurai (1986), Bennett (2010), Latour (1996); (3) material culture, adopting insights from Binford (1972), Leone (1995), Patnaik (1995) and Johnson (1995). These questions will be further engaged by presenting a theoretical discourse on the "social life" of the conchshell trumpet in coastal communities bordering the Indian Ocean.

A Theoretical Discourse on the Social Life of Conchshell Trumpets in the Indian Ocean Coastal Communities

The social life of musical instruments (Bates 2012) is a theoretical paradigm adopted in this thesis to encompass the full range of possible human-object-divine relations, as observed in

instrument making, their uses and functions, their subjective cultural meanings, and other numerous domains. I prefer to expand it even further by using the term *sound producing* instruments to bypass the challenge of translating “music” across social practices allowing for more cultural relativity. The relevance of a theoretical approach such as this allows for a contextual approach that unpacks latent uses and functions, as well as complex cultural relations of the conch within these coastal communities. Thus, we engage established themes such as: (1) “uses and functions'', already discussed within the distribution study; (2) “thing power” and “material agency”, acknowledging the conchshell trumpet beyond the role of a sound producing instrument; (3) “gendered nature”, how through traditions or cultural practices, access to playing the conchshell trumpet has favoured a particular gender over the other; (4) “Material Culture”, its classification and how the conchshell trumpet fits into each one. What follows is a discussion of the latter three themes. This casts a wider social net of enquiry that engages the conchshell trumpet as an instrument not only central to “human social networks'', but as an actor with its own agency. The extent to which it has survived this long history, despite the proliferation and evolution of the coastal communities that have been known to use it, demonstrates the conchshell trumpet’s resilience as a social actor.

Thing Power and Material Agency

A careful study of the conch distribution reveals that trumpets made from this class of marine animals (i.e. Gastropods) are perhaps the first, certainly the most widespread sound material objects that are significant to the social fabrics of coastal communities that border the Indian Ocean. Additional insights from Hickman (1949: 143-5), Desroches-Noblecourt (1963: 215), and Broholm, Larson & Skjerne (1949) further reveal that of all the prehistoric trumpets/horns made from any material object, the conchshell trumpet has arguably gained significant usage since the upper Paleolithic and Neolithic periods in various parts of Europe. With evidence based on excavations from graves and ritual sites, their usage has been traced further back than Tut-Ankh-amun’s trumpets (before 1343 BCE) and 1,200 years earlier than the Danish Lurs (around 800 BCE), known as the oldest European horns. Thus, it can be established that usage of the conchshell trumpet is significant even beyond coastal communities that border the Indian Ocean.

The Conch Horn: Shell Trumpet of the World from Prehistory to Today, by Jeremy Montagu (2018), is an ethnography that not only presents specific cultural interactions and traditions, but gives a high level of social significance to conchshell trumpets in both coastal and inland communities around the world. It also documents the biological classification of shells and the continental and ethnic distribution of conchshell trumpets, with contextual examples that extend from the Mediterranean, to coastal regions of East Africa, a wide region in Asia and Central America. Similar accounts are also referenced in *The Hora: Conch Trumpet of Japan,* (Fukui 1994), a historical documentation that dates the usage of the horn as far back as the Nara era (A.D. 710-794). This account highlights its military use and its symbolism to religious traditions such as *Shugando* (mountaineers' asceticism, a secret sect of Esoteric Buddhism). Another culturally contextual account of the conch is presented in *Sound-Producing Instruments in Oceania*, (Fischer 1986: 135-157). Fischer's account documents indigenous names, specific usages, folklores, myths and beliefs associated with the conch in the Islands of Micronesia, Melanesia and Polynesia.

This section of the thesis draws insight from the above ethnographic accounts of the conch in order to demonstrate the possibility of conceiving of the conchshell trumpet, not just as a sound producing material object, but also as a sound material culture that holds a degree of agency. The material agency and latent potential of a material object (i.e. conchshell trumpet), according to Bennett (2010: 9) can be termed "thing-power". Bennett broadens the idea, describing it as "agency beyond an inherent capacity only held by humans, but rather something seen as differentially distributed across a wide range of ontological types" (2010: 9). In other words, just as much as we ascribe so much power, mystique and allure to human intentions, any significant material object crucial to the sustainability of human survival or cultural traditions also has the capacity for action. These innate qualities give these marine animals considerable value and perhaps consequently makes them innately economically and culturally significant.

Considering these diverse uses, symbolic representation, and myth and beliefs associated with the conchshell trumpet presented in the above accounts, I suggest that the conch is not only central to human social networks and specific cultural traditions, but is an actor with agency (Bates 2012). This theoretical attribute is based on the following rationales: (1) the

geographical extent to which the conch is used as a signalling instrument and (2), its economic value and significance to sacred practices throughout much of Asia and Oceania, and (3) how it assumes different indigenous names and beliefs as it travels through these coastal communities.

Gendered Nature of the Conchshell Trumpet

Considering the coastal regions outlined in the distribution study (East Africa, Persian Gulf, South Asia and South-East Asia), a commonality that binds these coastal communities is the use of the conchshell trumpet as a signalling instrument, mostly used amongst boat men and sailors as fog horns, and in the military to relay specific warnings to either soldiers on the battlefield or to nearby villages in the event of an eminent attack. Perhaps these findings taken from the conchshell trumpet distribution study presented above can be used as contextual examples of factors and practices, amongst many others, that have saliently contributed to the gendered nature of the conchshell trumpet in these coastal communities.

The ideas of gender as outlined by Doubleday (2008), Holmes (2007), Nannyonga-Tamusuza (2005), and Qureshi (1994) help to further engage how exclusivity or norms that favour a particular gender become associated with the playing of the conchshell trumpet in these coastal communities. Social practices and specific social contexts are instrumental factors that shape gendered meanings, which in turn create the gendered nature of sound producing instruments. As posited in Regular Qureshi's essay on the Indian bowed *lute sarangi*, the features of the physical body and embodied acoustic identity become key factors in articulating cultural meanings. Qureshi argues that since the *sarangi* was and is still used consistently to accompany the singing of courtesans; its sound over years of this tradition has consequently projected a certain degree of feminine association with the instrument (1997: 4), echoing the example from the Bhagavad-Gita cited earlier in the thesis. A further example is found amongst the Naxis peoples in the western region of China that specifies strict rules that create a significant degree of gender accessibility to the conch-shell trumpet *Hailuo*. Sacred beliefs associated with the sound of the conch determine when it has been played and which particular dongba (a male indigenous Naxis priest) plays or touches the instrument (Helen 2011: 56).

Thus, adopting Qureshi's perspective and additional examples from the above distribution study, we can perhaps establish that the spatial context (monasteries, performance spaces, harbors), where the conchshell trumpet is significant, has directly influenced gendered meanings that favour access to a particular gender over the other. Furthermore, details from these accounts specify the gendered identity of players of the conch in these coastal communities, such as boatmen and sailors using the conch as foghorns, Buddhist priests who blow them before reciting their chants, and the male indigenous Naxis priest in western region of China designated to play the *Hailuo.* Of all these examples, in no instance is the female gender referred to as a possible conchshell trumpet player. It is also important to establish that, in no way is this study fully asserting that reasons for the gendering of these conchs are solely based on these factors and cultural traditions. The gendering of significant sound producing instruments such as the conch, operates on many levels, but we can perhaps point out some subtle and direct social conditions that contribute to their gendered nature. Insights from Qureshi (1997) and Doubleday (2008) highlight the capacity of instruments to carry cultural associations with gendered deities or spirits; often transmitted through indigenously held beliefs, legends, myths, songs and rituals. Additionally, through practices of social roles that determine which gender group is suitable to carry out a given chore or activity; it has also shaped how these coastal communities reify specific gendered relationships with the conchshell trumpet.

Material Culture

Material culture refers to how materials come to embody ideas and highlight social values overtime. Using this theory, we can acknowledge the conch beyond the material scope of a sea animal skeleton washed up on shores and used to relay signals. Rather, we can understand it as a sound producing material culture capable of retaining and reflecting ideas, values and traditions that significantly define a collective of people. An essay titled *Material Culture and Archaeology*, by Patnaik (1995), reflects on how the study of culture has been a central concern to the disciplines of archaeology and anthropology. The variety of approaches adopted in scholarship within these two fields, the categorization of culture into

material and non-material dimensions has been vital and analytically and methodologically efficient in unpacking traditions that define peoples and their cultural practices. As posited by Patnaik (1995: 59), "material culture is the finished or unfinished product carved out of the contextually situated materials and resources. It is a corpus of a conscious collective and an embodiment of the mentally perceived design". Thus, material culture has the potential to reveal the level of technology attained, ideas and values embraced in a socio-historical space at a specific time. This further aligns with Herskovits (1955: 305) definition of culture as the human-made part of the environment. Binford (1972: 20) takes this analysis further, stating that material culture can and does arguably represent the structure of the total cultural system, further synthesizing three major functional subclasses of material culture (technomic, sociotechnic, ideotechnic). Adopting insights from Patnaik's (1995) analysis of Binford (1972), the next paragraphs seek to present elements of the conchshell trumpet that justify their classification under two of these sub-classes.

Technomic Material Culture

According to Patnaik (1995: 60): "technomic material culture signifies those artefacts having their primary functional context in adapting to the natural environment". For coastal communities, the ocean is central to their geographical advantage. It is an environmental feature of great economic value and thus becomes culturally vital to the social fabric of these communities. Fishing becomes their main source of income and conches factor heavily into multiple related activities. Hence, these conches have functioned as signalling tools, like foghorns, to both fishermen and sailors whose practices are a defining character of the cultural and economic traditions known to these communities. In other words, the shells of these sea animals are vital material culture beyond the sound capabilities and thus their significance is multi-layered. The conchshell trumpet is a technological achievement that has simultaneously made it a sound material culture and a functional tool vital for adapting to the environmental demands. Thus, we can assert that this technological achievement and primary functionality of the conchshell trumpet justifies their classification as technomic material culture, as posited by Patnaik (1995: 60).

Ideotechnic Material Culture

This subclass highlights elements of a material culture which have their primary functional context on the ideological component of the social system. They are imperative to signify, imply and symbolise the ideological rationalization for the social system and further provide the symbolic milieu in which individuals are enculturated. Items such as figures of deities, clan symbols, symbols of natural agencies (1995: 60 - 61) fall within this sub-class. According to Ortner (1984), the early American anthropologists, Clifford Geertz and his colleagues at the University of Chicago, and Victor Turner at Cornell, pioneered the "Symbolic Anthropology" movement at the beginning of the nineteen sixties. Historically, it is one of the three movements that strengthened the theoretical paradigm of anthropology at the time. Although the symbolic anthropology movement had two major variants (1) the operations of culture and (2) the operations of society, which were independently invented, one thing they did achieve despite these variants was to put the understanding of symbols as a main feature in the interpretation of both culture and its society. Geertz further argued that "culture is not something locked inside peoples' heads but rather embodied in public symbols, symbols through which the members of a society communicates values and ethos passed on through traditions to future generations" (Geertz 1973 in Ortner 1984: 129).

Understanding the internal logic that gives symbols a deeper layer of meaning within a social context is central to the study and interpretation of the material and non-material aspect of culture. Adopting this framework to unpack the socio-musical significance of the sound of the conch is an approach that illuminates ideas that relay values, ethos and beliefs internally understood by members of these cultural communities. A relevant example of this is the *shofar*, a short end-blown horn symbolic of the Jewish temples and cultural community. According to Montagu (2014: 49-55), "the *shofar* today, in the western or Ashkenazi tradition, is used mainly for ritual purposes, principally on Rosh Hashanah, the Jewish new year also known as *Yom t'ruah*, a day of trumpeting. It is blown five times in the morning service to call Jews to repentance for their sins over the next ten days". The ethos associated with the *shofar* and its capacity to communicate ideas, simultaneously attributes a religious and ritual ideology to the horn. Arguably, this attribute is socially echoed in the continuous use of the conchshell trumpet for several millennia with evidence that reveals how it has

been a symbolic object and significant sound instrument to cultural communities who practice Hinduism and Buddhism. These are perhaps the most popular religious practices that stretch over a geographic region as wide as the whole subcontinent of India, south-east Asia and monasteries in Tibet, with a history reaching as far back as, at least between 600 AD and 150 BC (Montagu 2014: 29, Yuan & Mao, 1986: 83). References in the Vedas also state that the conch is a war trumpet; its sound is attributed to the creation of the world. It is also believed that on the last day when the world is in flames, *Shiva*, one of the three major deities of Hinduism will sound the conch (Sachs 1940); an unusual two-sided nature of the conch-shell trumpet; to herald new beginnings and announce a fatal end.

Symbols, either written, oral, or displayed through visual performance or ritual offering within a cultural context, have the capacity to organize, and communicate specific references which are interpreted by their users. This illuminates the internal logic system of symbolism needed to further interpret the different layers of meaning of both the conch itself and its resilient sound. Listeners and researchers who are non-native to these cultural communities where the conch is significant to the practice of a religion that defines a people, are culturally disadvantaged within the social space and left at the mercy of an interpreter to understand the cultural significance of the sound producing instrument. This unique attribute of the conch and its acoustic properties can be posited as material evidence that justifies the conchshell trumpet as a sound material culture with the capacity to animate diverse ideas, which theoretically can be classified under the ideotechnic sub-class of material culture.

Chapter Summary

A comprehensive analysis of the historical background, multilayered meanings, and intercultural beliefs of the conch and conchshell trumpet that are physically manifested in cultural traditions, reveals how the conchshell trumpet is significant to sustaining the social fabrics that make up these coastal communities. Furthermore, contextual examples that highlight diverse uses, functions, and the symbolic capacity of the conchshell trumpet, accentuates the resilient nature of the conch to adapt to complex social context. By adopting theoretical concepts from ethnomusicology and anthropology, this interdisciplinary approach

has widened the social scope of the conchshell trumpet. This understanding has simultaneously allowed for a theoretical discourse that elaborates on the social life of the conch, conceived as a complex web of human-object interactions in cultural traditions known to these coastal communities. Engaging these cultural traditions and ideas highlight: (1) how access to the conch shell-trumpet has been gendered; (2) the symbolic evidence that enable them to be classed into two sub-classes of material culture; (3) the economic and cultural significance that reveals their material agency and thing-power. The theoretical concepts and scholarship referenced in this chapter have been adopted as analytical tools and intellectual parameters to guide critical discourse and further achieve key research aims and objectives. The next chapter seeks to emphasize the importance of a culturally inclusive method of a labrosone classification system (organology), arguing for a contextual organological approach; one that perhaps has the capacity to accommodate unique cultural stories and relationships. In other words, it is an organology that not only presents musical and scientific aspects of instruments but also contextual information via ethnography as an experimental symbolic representation of a social structure.

Chapter 4

An Organology Beyond Cataloging and Classification

Musical instruments are objects made of varied materials that are often symbolic of cultural traditions endemic to a particular group of people. The sounds they produce carry subjective meanings influenced by conceptual ideas of music shared by that community. Doubleday (2008: 3) posits that these instruments are significant cultural artefacts endowed with a wide range of meanings and powers and to possess or play one is to wield power. Through their presence and their sounds, they have a special ability to transform consciousness, to embody metaphors, to mediate their player's affect, and symbolize a collective's cultural tradition. This chapter seeks to highlight these ideas in the context of musical instrument classification, in order to present a scheme that is both systematic and empirical. The chapter will also highlight how each classified instrument can be symbolic to a specific tradition, embody morphological variance, and index historical peculiarity in relation to their physical or cultural context. The overall goal of this is to contribute theoretically to currents of scholarly works that have argued for a detailed and individual study of musical instruments in the context of classification schemes. Hence, findings that emerge from this research will act as a point of departure for later research that seeks to contribute to a qualitative organology of labrosones in the Kirby Collection at the South African College of Music, at the University of Cape Town. This future research, I argue, can give life and historical context to the labrosones in this repository; a resource I further believe can intellectually contribute to other relative academic interest.

The research field that has traditionally dealt with the systematic study and classification of musical instruments, more broadly, sound producing instruments is called 'Organology' (Magnusson 2017). However, it is not merely this, considering how this definition echoes the limitations[16] of the Hornbostel-Sachs scheme (1914), and how it ignores the study of other dynamic social contexts of instruments that have been highlighted by various scholars[17]. In order to achieve a qualitative contextualized empirical study of instruments, much

[16] See latter pages of this chapter

[17] Mayre 1982, Ramey 1974, Eysenck 1972, Tyler 1969, Kartomi 1990, Zemp 1971

scholarship in ethnomusicology has consistently argued for an elaborate methodology for classificatory schemes and methods that expand beyond the canon of a systematic study.

From the innovative work of Hood (1982), who believed that a classification system needed to take account of details such as musical soundings and social functions of the instruments, to Bates (2012) who argued for the study on the social life of musical instruments, the field of organology has broadened its scope and goals. Some of these goals are echoed in the works of De Vale (1990) and Kartomi (1990), the former stating that organology's purpose was to help explain society and culture, and the latter arguing for the adoption of conceptual ideas in organology's methodology. Kartomi argues for an organology scheme that highlights dominant ideas of music and ethos associated with musical instruments relative to communities where they are socially significant. Following is a brief contextual overview of the term organology and how its objectives, taxonomical outcomes and methodology have continuously been shaped, in order to provide an introductory historical background narrative.

According to Oler, Montagu, and Hellwig (1970: 170 - 174) the term organology was first introduced within scholarship on musical instruments by Nicholas Bessaraboff (1941) in his work, *Ancient European Musical Instrument*. Bessaraboff raised concerns on how broad the definition of musicology was, including as it was at the time; the study of musical instruments along with other aspects of music. For Bessaraboff, the definition of "musicology" was comprehensive but also cumbersome for a singular discipline. He thus called to delineate the scope of this definition by pleading for a specific terminology that singularly defines the scientific and engineering aspects of musical instruments. This resulted in the adoption of a pre-existing term "organology" from the field of biology, where it is defined as the study of organs of living beings in reference to their structure and hierarchical classification. As might be anticipated, the introduction of newer ways of thinking are frequently met with contested debates, questioning the relevance and rationale and this instance was no different at the

time. Rather than engaging this lengthy debate, this thesis considers the key intellectual parameters and methodological insights from the earliest versions of organology[18].

Even though the term organology may not have been used within the writings of these early classification schemes, their implied ideas and methodology reflect why the term was perhaps central in establishing Bessaraboff's (1941) argument. Thus, what I am calling "An Organology Beyond Cataloguing and Classification" is both a descriptive and analytical tool. It has been carefully crafted in order to explore the history of concepts and methodological approaches (both indigenous and foreign) that have birthed the term organology. Insights on terminologies used by critical scholars[19] on classification schemes engaged within this chapter will be presented in the following paragraphs. The thesis will then move forward with relevant questions on the need to classify, in order to highlight important rationale that can be adopted for a broader discourse on classification schemes. The discourse on classification schemes will be subdivided into two parts: part (A) will provide an overview of the two earliest classification schemes from Asia and part (B) is a discussion on two significant classification schemes in Europe, one of which is the most popular but has also attracted the most criticism. Part B concludes by engaging recent schemes by 20th century scholars who argue for a new ideological and methodological shift in the ways we conceive of, and present new schemes of classification. While other classification schemes exist, these have been selected as a means to explore how organology may benefit from insights that encompass realms beyond classification, and why it is important that these be recognized, while staying within the scope of this thesis.

Classification

With the term "classification", I refer to a scheme that organizes knowledge about selected entities from a chosen domain and further subdivides them into sets of classes. With regards to classification schemes of sound producing instruments in literate societies, some "emerge

[18] The Chinese instrument classification system *Pa Yin* scheme, which may date back to the third millennium B.C.E and the Hindu-Indian scheme *Natyasastra* which is approximately two millennia old; both still relevant till date (Kartomi 1990).
[19] Mayre 1982, Ramey 1974, Eysenck 1972, Tyler 1969, Kartomi 1990, Zemp 1971,

naturally"[20] over time and in orally oriented societies, some are "imposed artificially"[21], or manipulated academically by the investigator or classifier for a specific purpose. Thus, a broad distinguishing feature of instruments and indigenous conceptual ideas of instruments is likely to be taken into account with the former, while with the latter, a limited number of characteristics, and types of instrument are often selected to fit the classifiers intent. In light of this, I posit that a classification scheme can only be said to be comprehensive when viewed in the context of its creator or adherent's concept of instruments. Regardless of the origins of the classification system (natural or imposed), we can establish that: the choice of instruments included in it, its principles or characters of division, and its resultant categories, reflects the classifiers societal structure and conceptual ideas of instruments (Kartomi 1990). A vast number of cultural communities around the world have developed their own formal or informal ways of classifying instruments and ensembles and some will be discussed in the latter part of this chapter.

Taxonomies

Taxonomy consists of a group of taxa, of entries simultaneously grouped or assigned by their characters or features, using a method of logical division and applying one character per step that proceeds either downwards or upwards. However, in some cases it is not always consistent, that is, it could loosely adopt the method of a downward logical division and also apply more than one character in one or more steps.

MUSICAL INSTRUMENTS			
PERCUSSION	WINDS		STRINGS
	FLUTES	LABROSONES	

Table. 1 Sample of a Taxonomy.

[20] Culture-emerging or natural schemes tend to reflect the broad ideas or the identity of the culture that produced them.

[21] Artificial or observer-imposed schemes on the other hand, are frequently based on the objectives of an individual investigator whether scientific, museological, or others; for example, schemes may be limited to morphological aspects or to acoustic details (Kartomi 1990: 13).

Downward and Upward Classification

Downward classification by logical division is a systematic process of grouping and subdividing instruments macro-taxonomically by single-character steps. It begins with the most general or abstract level observed and moves downward to the less general but still not entirely specific. It is driven by an essentialist ideology that relegates and depicts the musical instruments being classified as a static and fixed object. Hence, there is a tendency to imply an essentialized character over each step suppressing meaningful variations of the objects grouped in each step. Most classification systems take the form of downward taxonomical thinking, not until the seventeenth and eighteenth centuries did its ideology and classificatory schemes begin to be widely rejected and gradually replaced with upward taxonomical thinking. Upward classificatory thinking on the other hand takes a micro taxonomical approach based on the detailed knowledge of a body of specimens. It takes into account many facets of a particular instrument, sorts the instruments into groups of similar characters, starting at the lowest possible level and building by increasing more abstract classes. Unlike the downward thinking, upward thinking acknowledges the instrument as an actor that is alive and continuously influenced by its immediate socio-musical context, thus highlighting variant musical and extra-instrumental concerns.

Paradigms and Typologies

A paradigm is normally an endemic naturally occurring, or emic classificatory scheme. The advantage of this scheme is that it clearly indicates preferences in the cultural group's instrumentation, hence limiting the observers' or scholars' exaggeration or cultural imposition. Paradigmatic classification schemes are often constructed and presented in a mandala form and are emic schemes emerging from within the society. They then evolve in informal communication over a long period of time before being applied in a largely intuitive fashion. Hence theoretical possibilities or logical completeness is not a sought objective, unlike downward logical division taxonomies, rather their similar characteristics and ensemble or solo preference are more important. The two oldest systems of classification, the Chinese and Hindu, both fall most readily into this form, and recent scholars such as Hall

(1984) and Zemp (1974) have also recognized the peculiarity of this scheme. Typologies on the other hand, are always the construct of the observer or scholar. All available data of the instruments are first gathered and then grouped into categories (variants and types) that apply to different aspects of the instruments, which eventually intersect. Typological thinking moves from the observation of details to their groupings at a more general or abstract level of knowledge that results in upward classification. It is an empirical investigation of an individual instrument and aims for accurate, detailed study and grouping. This system of musical instrument classification was pioneered by scholars such as Oskar Elschek and Erich Stockmann (1969) and will be engaged in the latter part of this chapter.

With this introduction to the concepts used by scholars of organology studies, how then do we best contribute to the discourse of organology[22]? We can begin by asking a fundamental question: why do we classify? According to Stephen Tyler (1969) on *Cognitive Anthropology,* "we classify because life in a world where nothing was the same would be intolerable. It is through naming and classifying knowledge or objects that the whole rich world of infinite variability shrinks to manipulable size and becomes bearable". Tyler's opinion was also echoed in Kartomi's (1990) ethnomusicological account on classification schemes of both oral and literate societies from South Asia, Arabia and Europe. Insights from this account reveal that "classifications express in a condensed form (either by single character or multifaceted division), a culture or subculture's concept of what instruments are and mean in their musical and social context" (Kartomi 1990: 13). Kartomi further explains that it is a fundamental principle of human thinking to classify groups of objects, and in the case of instrumental classification, it evidently influences the way in which each culture creates and responds to music itself. For instance, a Western composer who adheres to the traditional European classification of instruments, for example, strings or wind, writes and orchestrates works in a style that considers the musical capacity of these instruments. On the other hand, a non-European composer who adheres to a completely different classificatory scheme, such as the Chinese or Hindu scheme, not only considers the musical capacity of instruments in these

[22] Musicology's oldest discipline with a plethora of scholarships dating as far back as the third millennium B.C.E. (Kartomi 1990)

schemes, but also considers factors such as timber and other ethos associated with instruments.

Thus, the resultant categories, conceptual ideas and character of divisions that constitute a classificatory scheme, not only reveal the variety of instruments known to a particular cultural community, but go further in influencing how they compose and respond to the music itself. It becomes a practical method and tool to intellectually demonstrate ideas, myths and religious beliefs associated with these instruments. This approach is evident in both oral and literate societies where instruments play a significant role in social activities that constitute their culture. Furthermore, through conceptual ideas that determine the functions and uses, the principles of categorization and division of these instruments, we often find extra-instrumental concerns, such as mythology, societal structure, cosmology, or religious function playing a significant part in their schemes (Magnusson 2017). In order to further explain why we classify and give examples of conceptual ideas that have and still influence classification schemes, this thesis draws insights from the two oldest, yet relevant classification systems (*Pa Yin* and *Natyasastra*), and two others from Europe (Victor Mahillion and HornbostelSachs scheme).

Part A: Insights and Overview of the Two Earliest Classification Schemes from Asia

The Chinese *Pa Yin* Scheme

The *Pa Yin* principle of categorization was based on characteristics of the materials the instruments were made of, and these characteristics were also allied to other physical and metaphysical phenomena such as: the wind, the abundances of grain, human welfare, wealth and political power (Kartomi 1990: 37). Kartomi states that though the sources and historical development of this ancient scheme seems to have been omitted within most scholarship, it is widely asserted that in the time of the legendary Emperor Shun (2233 - 2188 BCE), two types of classifications based on materials the instruments were made of already existed. These classifications, as recorded in the *Yo chi,*[23] consisted of instruments divided into four categories: stone, skin, silk, and bamboo (fig. 7). Another eight instrument categories (bells,

[23] Re*cord of Ritual Music and Dance*: compiled from sources of the Chou period 9th to 5th centuries BCE.

drums, pipes, flutes, ringing stones, leather, shields and axes) were also mentioned in a latter passage of this same book (fig. 8). However, unclear these two classification systems might appear, it is evident they both complemented each other in terms of the sources of sound and perhaps how equally popular they both were. According to Needham and Robinson (1962: 142 - 148) "it is also clear that the eightfold Chinese classification of sound was arrived at only gradually".

The Chinese *Pa Yin* is no exception with regards to extra-musical concerns. This is based on two ideas: (1) the nature of sound, which is historically referred to as *Chi* (subtle matter, emanation, human breath and spirit)[24] and (2) that sounds were portents, prognostic aids, and manifestations of the equilibriums and disequilibrium of nature and political power (Kartomi 1990: 39). Insights from Needham and Robinson (1962: 133) additionally state that the concept of *chi* "molded Chinese thinking from earliest times just as form and matter dominated European thought from the age of Aristotle onwards". Thus, reasons as to why the *Pa Yin* principle of categorization was based on characteristics, such as the eight materials the instruments were made of, were not only limited to the timbre of sounds they produced. In addition to this, the sympathetic magic of sound vibration, which was believed emperors used to command respect and attain political power, was also a factor (Kartomi 1990). The use of instruments as part of the courts consort or the emperor's regalia is not unique to China, it is also an attribute that echoes how the kings in Uganda used the sound of the *Amakondere* (side-blown wooden trumpet) to affirm their authority (Cooke 1996: 447). According to Needham and Robinson (1962), another reason why the *Pa Yin* scheme was based on those eight materials was due to a popular Chinese philosophy at the time, asserting that each of these eight materials controlled one of the dances performed at ritual mimes, which in turn could induce one of the eight winds. In other words, the eightfold classification correlated with the eight directions or sources of wind as well as the eight seasons:

> *"Stone instruments were associated with the northwest and autumn-winter, metal instruments with the west and autumn, silk-stringed instruments with*

[24] The *chi* were believed to rise up or descend from heaven and their intermingling to produce wind, wherewith heaven makes music. All were signs and symbols of those great climatic processes on which life of the ancient Chinese people depended, balancing ever between flood and drought (Needham and Robinson 1962:133).

> *the south and summer, bamboo instruments with the east and spring, wooden instruments with the north and winter, gourd instruments with the northeast and winter-spring, and earthen instruments with the southwest and summer-autumn".* (Needham and Robinson 1962: 153-154).

Thus, the materials of instruments were indirectly related to humankind's control of the winds and the weather. Music, instruments, and seasons were part of the calendric system, as well as the welfare of the state. A careful study of the Chinese *Pa yin* supports the notion that if a classification scheme has the capacity to reflect a culture's or subculture's conceptual ideas of instruments, both in their musical and social context, it perhaps becomes an important method and tool to also intellectually demonstrate these ideas. Consequently, the *Pa Yin* continued to be used to exemplify the dominant philosophy and cosmology of Confucian and Pre-Confucian China throughout the middle, ancient and late historical period. In addition to this, in order to strengthen the government, regulate society, educate people and above all exist in harmony with nature, it became imperative to apply the scheme to instruments used in court ritual music (Kartomi 1990: 42, Yang Yin-Liu 1980: 260). Prior to the 18th century, the court was seen as the centre of political power within any social structure, thus making it the most attractive and sought-after space for both music and most musicians. The court as a physical cultural space was a central and significant spatial symbol of authority. Consequently, emperors in China for over two thousand years harnessed the emotive power of sound through court ritual music (*ya-yueh*) to assert this political power as part of their regalia. This occurred from the first Ch'in dynasty (221 to 206 BCE) to the last Ch'ing dynasty (1644 - 1911 AD), and not only instruments but music itself was classified, as in the case of the T'ang dynasty.

This classification was achieved by dividing court ritual music into a simple taxonomy consisting of outdoor chime ensemble music and indoor chamber song, coupled with four other categories: popular, foreign, banquet, theatrical and *ch'in* (zither) music (Kartomi 1990: 42). Not only does this scheme reveal concepts of taxonomic division of music and instrument ensemble, it also distinguishes the main levels of power in the court. The preferred instrumental ensemble and the spatial arrangement of these instruments symbolized hierarchy within the court. These were situated in such a manner that aligned

with the four directions of wind and to the four divisions of social ranking. Thus a "paradigmatic classification scheme was achieved, and it further served as a terse statement of social relationships within the court. The music chime ensembles were subdivided into:

(1) those reserved for the reserved for emperors and arranged on all four sides of the square
(2) those reserved for lords and arranged on three sides (east, west, and north)
(3) those intended for ministers and arranged on two sides (east and west)
(4) those used for lower officials and arranged on one side (north) (Kishibe 1980: 251-52)

At this point it can be established that the main movements in China's history of instrument classification show above all, the remarkable efficiency of the eightfold *Pa Yin* scheme, to not only classify the diversity of instruments at the time, it also represented an intellectually designed classificatory scheme that revealed how the instruments were linked to extra-musical aspects such as, weather seasons, magic and ritual mimes. Both the eightfold and the fourfold classifications began as paradigmatic constructs: they were cosmological statements about the source of sound which was viewed as being indirectly related to the seasons, the directions of the winds, political power and human welfare. Ideas about instruments at the time were based on the elemental belief in the breath or spirit that enabled sounds and instruments to serve as manifestations of nature as well as aids to performing magical services. Each Instrument made from the eight materials controlled one of the dances performed at ritual mimes that in turn could summon one of the eight winds. Through its court music and instrument classification, the scheme revealed both social relations and hierarchy between officials in the court and the people they governed. In other words, the *Pa Yin* scheme went beyond being a logical taxonomy, rather, a paradigmatic scheme that was intellectually designed to also reflect the Chinese social structure.

The Chinese *Pa Yin* scheme to date is still relevant, and reasons for its longevity can be linked to how it symbolizes Chinese music tradition, coupled with how it highlights the social significance of their indigenous instruments. According to Yin-Lui (1952), the *Pa Yin* scheme is still relevant to date based on the prestige it derived from being part of mainstream tradition of philosophical thoughts at the time, and its pioneering literal sophistication which has also

continuously influenced later schemes. Both these reasons are extremely compelling if we consider how the cognitive ideas embodied in the *Pa Yin* scheme has been re-echoed and revised in latter schemes. Examples of this include, the Hindu *Natyasastra*, Aristides Quintilian's concept and classification of instruments and Mahillion's classification scheme, which became the foundational principle on which the Hornbostel and Sachs classification scheme was built.

The Hindu *Natyasastra* Scheme

Just as two-classification systems were popular in ancient China, so it was for Ancient India, and each of these classification systems was a product of the two most popular religious practices, Hinduism and Buddhism. Both the religions and classification systems continue to be relevant in India and Sri Lanka. A third religious ideology, Jainism, also produced its own classification of instruments, which remains relevant in Jain India (Kartomi 1990). A common thread of idea that runs through literature on these three religions from ancient times, refer extensively to their classificatory schemes and significance of musical instruments to their practice. Each of which also manifest distinct conceptual ideas embodied in their relative classification scheme. It is imperative to state that varied indigenous concepts and classification of instruments in India and Sri Lanka still awaits further research. However, this chapter proceeds to highlight the conceptual ideas of the Hindu-*Natyasastra* scheme (fig. 9). Insight from the famous Sanskrit treatise - *Natyasastra* attributed to Bharata Muni, possibly co authored by a number of writers between the second century BCE and the sixth century CE, presents the oldest extant classification of instruments in India. Instruments from this treatise were divided into four main categories according to their order of importance and further distinguished by their morphological characters; the physical characteristics of the sounding body.

(1) *tata vadya* "stretched" instruments such as various kinds of *vina*
(2) *anaddha* or *avanaddha vadya* "covered" instruments such as various kinds of drums
(3) *susira vadya* "hollow" instruments such as lutes and trumpet

(4) *ghana vadya* "solid" instruments such as bells and cymbals (Masukani 1982: 50, Willard 1875: 93 - 94).

The second step of this scheme subdivides these four categories of instruments into two subordinate categories or limbs. The major limb consists of instruments that play the most prominent musical role, where the minor limb consists of instruments that play accompanying roles and are thus relegated to a second place. The division into major and minor limb instruments in the *Natyasastra* according to Ghosh (1961: 161 - 63) reads as follows:

- Among the wooded (stringed instruments) - *Vipanci* [a *vina* with seven strings] and *Citra* [a *vina* with nine strings] are major limbs. *Kacchapi* [a one-stringed instrument] and *Ghosaka* [a kind of *tanpura* used as a drone] are minor limbs.

- Among the drums- *Mrdanga* [an earthen drum], *Dardura* and *Panava*; these are classified as major limbs. *Jallari* and *Pataha* [deep sounding drums] are classified as minor limbs.

- Among the hollow instruments- the flute (*vamsa*) has the characteristics of the major limbs [of a performer] and conch-shell and *Dakkini* [that of] the minor limbs.

The quality of sounds produced by the instruments are additional lower-step characteristics defined in the scheme such as whether drums produce regular sounds or deep and loud sounds (Brown 1965). Strings and winds that were discussed in the treatise were classified with their playing techniques, their accompaniment to vocal music, and their function in the drama. Musical function of the "solid" instruments was said to be to mark off the time circle. In complement to the Chinese *Pa Yin* scheme, the Hindu *Natyasastra* scheme also adopts a paradigmatic approach in a latter section of the treatise where it states distinction between solo and preferred ensemble instrumentation. The treatise states three kinds of relationships between a solo vocalist and accompanying flute, string, and drums parts:

(1) The accompanist doubling the vocalist's part.

(2) The accompanist elaborating but essentially preserving the works melodic or rhythmic aspects, with virtuoso playing on sustained vocal tones or pauses between sections.

(3) The accompanying string player alternating antiphonally with the voice while the drummer indulges in virtuoso playing (Ghosh 1961: 108 - 110, 118 – 120, Powers 1980: 114).

An overview of the Chinese-*Pa Yin* and Hindu-*Natyasastra* Scheme

The motive here is not to embark on some comparative study, but rather, to magnify two major significant points: (1) The conceptual differences that gave each of these ancient schemes the intellectual depth and capacity to go beyond a systematic classification system. The underlying concept most influential to the eightfold *Pa Yin* scheme was based on ideas about the nature of sound, which also included the concept of *chi*, the idea that sounds were portents, prognostic aids, and manifestations of the equilibrium and disequilibrium of nature and political power. Furthermore, instruments made from each of the eight materials highlighted in the scheme, were believed to control the wind, and thus the materials of instruments were indirectly related to humankind's control of the wind and weather. In other words, music and instruments were part of the calendric system and the seasons and well as the welfare of the state (Needham and Robinson 1962: 134 - 140). On the other hand, the fourfold Hindu-*Natyasastra* scheme is practically oriented and somewhat detached from the religious ethos surrounding Indian instruments (i.e. the *vina* and drums[25]). Kartomi further argues that the *Natyasastra* was in fact a practical manual on dramaturgy due to its inclusion of instrumental music, dance, vocal music, the practical layout of theatre, and poetics. Central to the scheme was the unity of the arts, ethics, cosmic functions and the scriptures; these were the values and views of the *Natyasastra.*

> "Art is not merely a pastime (*vinola*), but should illuminate the aims of life, should be a source of instruction and illumination, should soften the ills and grief of life, should intensify the pleasures and joys of life, should exhibit the panorama of life, should teach what is auspicious for human life, should be a refuge from the storms and miseries of life existence, and should point the way to the highest life". (*Natyasastra* 1.75 – 86)

[25] Such as the *mrdanga, pushkara, panava* and *muraja.*

Furthermore, while the Chinese-*Pa Yin* scheme classified instruments based on the material they were made of the Hindu-*Natyasastra* scheme preferred to classify using analogy from the parts of the body (i.e. limb); an anthropomorphic link argued to reflect the idea that the *vina*[26] parallels parts of the human body. For example, the frets are synonymously seen as the human vertebrae, and significant in yogic philosophy (Subramanian 1985: 14).

The second point refers to the emic approach to musical instrument classification evident in these cultural communities. Both the Chinese *Pa Yin* and the Hindu *Natyasastra* do share a similar indigenous internally derived classificatory style relevant to the societal and cultural norms and traditions. Furthermore, both classification schemes are paradigmatic schemes graphically taking the form of a mandala; perhaps this preference can be linked to the importance of mandalas in tantric thoughts shared in the religious practice of Tantric Buddhist and Hindus popular in both cultural communities. Mandala designs, either simple or complex in nature with features likened to satellites arranged around a centre, are said to occur with such insistence at various levels of Hindu-Buddhist thought and practice. Consequently, this invites the observer to sometimes probe their representational efficiency (Tambiah 1985: 252). Additional insight from Kartomi (1990: 23) states that mandalas are one of the oldest classification devices. Usually they adopt the shape of a circle or a square, and in some instances both shapes intersect and are linked to a mathematical matrix. However, their main objective is to demonstrate graphically the relationship of varied ideas and facets of these classified instruments to each other in a comprehensive nonlinear, nor logically complete fashion. Central to its morphology is to demonstrate a classificatory scheme as holistic as possible.

The Significance of a Paradigmatic Scheme

A paradigmatic scheme in the form of a mandala is perhaps extensively efficient when arguing for a classification scheme that seeks to do more than just systematic cataloguing and classification. As in the case of the eightfold *Pa Yin* scheme, besides its efficiency to

[26] The vina's parts are analogous to the various gods. The instrument symbolizes the divinity of human beings. It has numerological significance and is considered to be the most complete of instruments because it has the fundamental drone within itself (Subramanian 1985: 15). Perhaps the most revered instrument in India and Sri Lanka.

intellectually demonstrate indigenous ideas and cosmological thoughts associated with the materials the instruments were made of, it also had the capacity to reveal the social relation and hierarchy within the court. The scheme had the capacity to explain both the "dominant indigenous ideas of instruments within the culture and the social structure"; these are newer possibilities of an organology study as argued by (Kartomi 1990 and De Vale 1990). The Hindu *Natyasastra* scheme similarly comes to mind when thinking of these newer possibilities. A very significant example from the scheme is its extensive documentation of the *vina.* I.e. how its parts are analogous to the various gods, and how merely seeing or touching the *vina* one attains *svarga* and *moksha* (salvation from the bondage of finite existence). Perhaps we can also refer to the Hindu scheme as a synonymous example of an organology study that demonstrates "embodied affect and affective meaning" of instruments (i.e. *vina,* drums), an insight further explored in (Qureshi 2000).

In the previous chapter of this thesis, mention is made of how significant stories are in achieving an organology that not only presents musical and scientific aspects of instruments, but also contextual information via ethnography as an experimental symbolic representation of a social structure. This was buttressed by adopting insight from Woodward (2009: 60), stating that stories and narratives hold an instrument-object together, giving it cultural meaning and significance. Perhaps yet again we can establish these outcomes: The extensive nature of the paradigmatic scheme, which had the capacity to reflect as many facets, ethos, stories and conceptual ideas in both schemes; is a significant factor that has also contributed to their relevance to date. This approach could also be argued as what gave the instruments classified in the schemes, life; perhaps a practical example of a "lived organology" as explored in Hooshmandrad (2004: 42).

PART B

Discussion of The Two Significant Classification Schemes in Europe: Victor Charles Mahillion and Hornbostel-Sachs .

What these two significant European schemes demonstrate is how, despite their attempt to formulate classificatory schemes that were independent of their socio-cultural context and classifier's subjective values, these schemes remained a product of their time and are a direct

result of their classifier's cultural subjective views of the instruments they were seeking to classify[27]. In relation to the case for an organology beyond cataloguing and classification, what this shows is how despite the advantages of a systematic classificatory scheme that could encompass a volume of both European and non-European instruments, this was at the cost of disregarding contextual cultural significance of the instruments. In comparison, the culture-emerging schemes of the Chinese *Pa Yin* and the Hindu *Natyasastra*, provided room for a broader understanding of the cultural significance of instruments ordered within the scheme.

Victor Charles Mahillion Scheme

Victor Charles Mahillion was a curator at the *Musee instrumental du Conservatoire Royale de Musique* in Brussels- Belgium who published a five-volume catalogue of musical instruments between 1880 and 1893. This became the first classification of musical instruments suitable for worldwide use, and its main objective was to catalogue and develop a coherent organizational scheme for the museum's large collections of instruments brought back from the European voyages. Though previous classifications had been designed to cater and reflect conceptual ideas of instruments specific to a particular cultural community, the changing thread in theoretical and practical approach to classificatory schemes in Europe suggests that concepts from previous eras were no longer appropriate for contemporary needs. This included, classifying instruments that were non-European and thus seen as exotic sound objects. Mahillion was the curator of these large and growing collections of instruments held in his museum, and like all previous European schemes, his classificatory scheme adopted the method of downward logical division (Kartomi 1990, Magnusson 2017). Adopting obvious characteristics and taxonomy reminiscent of the Indian *Natyasastra* scheme, Mahillion published a museum classification system for this collection between 1880 and 1893. With an introductory essay explaining the system, what became central to the scheme's layout was its applicability and symmetrical structure. This was achieved by applying a single character of

[27] See Magnusson (2017) for Prophyry's attempt at the first systematic classification system of Medieval era, influenced by Hellenic thought. See Restle (2008) for an account of Michael Praetorious' *De Organographia* (1619) and the Victor Charles Mahillion Scheme (1880) and their Renaissance influence, specifically of the Scientific Revolution and the great voyages of discovery.

division at three of its four steps (fig. 10). The first step was divided into four “classes”, and governing this division was the nature of their sound-producing body:

The 1st class was called “autophones” (self-sounders), in which the nature of sound production of these instruments is achieved or maintained by the elastic capacity of the instrument’s body without any kind of applied tension, i.e. strings in general.

The 2nd class was called “membranophones”, in which the nature of sound production of these instruments is determined by the sound waves excited by tightly stretched membranes, i.e. drums.

The 3rd class was called “aerophones”, in which the nature of sound production of these instruments is achieved by releasing a column of air that is set in vibration, by wind or breath directly into the body of the instrument with/without a mouthpiece or indirectly across a reed, i.e. horns, flutes, oboes.

The 4th class was called “chordophones” are instruments that produce sound by the excitation of stretched strings.

As discussed earlier, Mahillion applied only a single character of division at three of its four steps in order to achieve a logically applicable and symmetrically structured classification scheme. The second step of division was named “branches”, adopting a similar analogy to the Indian *Natyasastra,* and here the characteristic that guided the division was the mode of sound activation, i.e. if they were plucked, played with reed or with forming an embouchure. The third step of the division was named “sections”, though insights from the introductory essay that explained the scheme stated, only a single character of division at three of its four steps. The third step, however, does not reflect this singularity. Evidently, two obvious characteristics operated here. Some aerophones and all the membranophones were grouped according to whether they produced sounds of fixed or variable pitch, and in the second instruments were grouped by the precise form of the sound activator (i.e. the use of a plectrum or keyboard). The fourth step of the division was named “subsection”. Here the character of division was governed by the morphological details of the instruments, such as slides or pistons which in turn determined the timbre and pitch. The breadth of Mahillion’s

scheme when compared to previous schemes was its inclusion and wide coverage of instruments (European and non-European), its potential for logical exhaustiveness, and its careful attention to morphological details. Indeed, Mahillion's concept of instrument at the time was referred to as a work of genius, however, it can be argued that the classification exemplified attributes that were directly secular, ahistorical and systematic. Perhaps because it was mainly for cataloguing purposes, the centrality of its objectives had to be as systematic and logically complete as possible. Hence, it took insufficient account of the various facets of the instruments, any possible ethos associated with them, nor information about the social context from whence they were most probably extracted from. To Mahillion, the object of classification was the finished instrument, not its process of construction; hence they were likened to lifeless objects with acoustic properties and exotic morphological features. As an instrument curator, and also having embarked on voyages in that era, he most probably was aware of the numerous facets and diversities of instruments throughout the world, but the main concept of instrument that became evident in his scheme was primarily based on European experience.

We can therefore establish that schemes such as this are practical evidence of how hegemonic ideas or cultural concepts of instruments held by the authorship of a scheme, inevitably determine the character of division and taxonomical entries of a scheme. As Kartomi (1990: 14) highlights this, "schemes developed by individuals usually represent a single train of thoughts or intent rather than directly reflecting the broad musical or symbolic base of a culture or subculture as a whole or aspects of it". In conclusion, it is relevant to state that in addition to the search for new ideological approaches and voyages of exploration of this period, also at play was a colonial and imperial movement that sought to conquer and acquire cultural materials across the globe. This also ushered in the nineteenth century scientism, characterized by the work of Conte, Darwin, Marx, Freud, Grimm and von Humboldt. Central to their work were methods of collecting, measuring, describing, analyzing and classifying which was vigorously applied in the study of cultural change and natural evolution; both were popularly revered concepts of the nineteenth century scientific practice. Consequently, the use of scientific instruments as epistemic tools of thinking about the world also influenced musical thinking of the time. Evidence of these influences were

exemplified through technological inventions such as chronometer, tuning forks and metronomes; though they also aided and provided a new platform for the development of broader compositional approaches (Jackson 2011, Magnusson 2017). Perhaps it can also be argued that these events, coupled with the adoption of a purely scientific epistemic methodology, further manifested itself in the conceptual ideas of instrument classification of the early twentieth century. Through the works of Eric von Hornbostel and Curt Sachs (1914) in Berlin, the increasing explosion of organological knowledge on both systematic and logical front rapidly became standardized.

Hornbostel-Sachs Scheme

Erich Moritz von Hornbostel and Curt Sachs develop for museum collections of instruments, an information storage and retrieval system, which eventually became the universal classificatory scheme. This was achieved by enlarging some of the taxonomic divisions, and further introducing numerical categories onto Mahillion's scheme. Taxonomically, its embodied features are reminiscent of the numbering system developed for libraries by American librarian Melvil Dewey (1851-1931). According to Parker's analysis, Dewey's numbering system was:

> "a hierarchical system of dividing and organizing knowledge in a library based on the decimal principles. In it, knowledge is divided into groups, with each group assigned 100 numbers; e.g. religion is in the 2000s. Within each class, the principle sub- series are subdivided by 10. In practice, the notion always consists of at least three digits, although its theoretical expression could be extremely long. The notion lends itself to memory through the constant repetition of a standard pattern" Parker (1979: 508).

However, to entirely submit that Hornbostel-Sachs scheme is identical to Dewey's system, might be critically cautioned; the similarity only occurs at the initial stages of both systems (Grame 1963: 138). The Hornbostel-Sachs system further incorporates a varying set of criteria to distinguish its various subcategories under four main taxa, while the Dewey system applies a single author and subject across the board (Kartomi 1990: 168). Insights from Baines and Waschsmann's (1961: 4-6) translation of Hornbostel-Sachs (1914) scheme gives more insights and rationale behind the scheme. These insights in the writings of the authors reflect differences between their total concept of instruments and the limited concept of

instruments they ended up adopting for classificatory purposes. Despite acknowledging the broad parameters of instruments: cultural history, acoustics properties, and morphology, and even further describing them as being "alive and dynamic without reference to any conceptual scheme". However, they also had to surmount the difficulties and inevitable outcome of a macro-taxonomic scheme objectively designed to suit universal applicability; hence they adopted a restricted and selective approach in order to attain a "systematic and sharply drawn demarcations and categories". The scheme as stated by the two authors needed to be applicable for "all nations and times", in other words having the capacity to enter the selected instruments in a manner independent of cultural context and relativity. In addition, just as with Mahillion's scheme, Hornbostel-Sach's scheme had a static, ahistorical view of instruments as a musically functioning and morphological object. Central to their schemes objectives was to devise a classification system that was first and foremost for systematic and practical museological purposes and not to show historical change.

The first groups of division of the scheme were identical to that of Mahillion's except for renaming the first of the four categories from "Autophones" to "Idiophones" (fig. 11). The system further situates instruments in the scheme with a string of numbers separated after every three digits by a decimal point. This was a significant classificatory method and introduction that gave the system some latitude when compared to its predecessors. Hence being a fourfold category scheme, the first number was to denote each of the four main categories: **1** Idiophones, **2** Membranophones, **3** Chordophones, **4** Aerophones[28]. Each number after the first denotes the first sub-class, principally divided by a single character: **4** Aerophones, **41**= free aerophones "the vibrating air is not confined by the instrument", **42**= wind instrument proper "the vibrating air is confined within the instrument itself" (1961:24-25).

Hornbostel and Sachs were both adherents and heirs to a long tradition of downward classification by a method of logical division, basically allowing not more than a single characteristic per step. However, due to the various characteristics of the instruments, which were specimens and sound-objects brought back to Europe from the many voyages, it

[28] Thus, all four categories were divided according to the one general character; "the physical characteristics of sound production" (Hornbostel-Sachs, 1914: 8).

became too complex in achieving symmetry or consistency within the scheme. Thus, a single-characteristic division could not operate beyond the first step of their classification. They let the principle of division be dictated by "the nature of the group concerned, so that ranks of a given position within a group may not always correspond between one group and another" (1961:8-9). For instance, at the seconds step:

1 Idiophones were divided into **11=** struck, **12=** plucked, **13**= friction, and **14**= blown. **2** Membranophones were divided into **21**= struck drums, **22=** plucked drums, and **23=** friction drums.

3 Chordophones were divided into **31=** simple Chordophones or zithers and **32=** composite Chordophones. **4** Aerophones were divided into **41=** free Aerophones and **42=** wind instruments proper. Further addition of relevant code figures denoting a form of hierarchy (orders and sub-orders) are introduced as the entries get wider in the scheme:

Conches **423.11,** if it's end-blown **423.111**, without mouthpiece **423.111.1,** with mouthpiece **423.111.2** and so on. The ingenuity of adopting Dewey's Decimal System; in the words of the authors:

> "Is in the exclusive use of figures, replacing the more usual conglomerate of numbers, letters and double letters by decimal fractions. These are so used that every further subdivision is indicated by adding a new figure to the right-hand end of the row; the zero before the decimal point being always omitted. Thus it becomes possible not only to pursue specification to whatever limit one desires and with never any trouble in the manipulation of the numbers, but also directly to recognize from the position of its last figure the ranking of a given term with the system" (1961: 10).

Objections have been raised concerning the string of numbers which, at some point becomes rather unwieldy. However, what becomes notable is that, to a very fair degree, the system enables a tracing down to the unique features of individual instruments, through logical divisions at each hierarchical level. Furthermore, another ingenuity the scheme lends itself to, is the caution and perhaps rejection of a completely schematic symmetry. Most especially "where the wealth of form is exceptionally vast, as with rattles, only the more general aspects of their classification can be outlined in the scheme, and these will certainly require further elaboration" (1961: 10). It becomes obvious that Hornbostel and Sachs, conscious as they were, allowed for some flexibility, possible changeability and varying degrees of complexity apparent with perhaps non-Europe forms of instruments. Further leaving room

for additional and further development of their scheme as and when new data is recovered (Kartomi 1990). With less than four decades after the scheme's publication, Sachs (1940) became the first (of many other scholars to follow) to advance this scheme; even though he was a huge contributor to its previous publication. This was achieved by adding a fifth category named- **5** "Electrophones", which further divided into three other subcategories: **51=** electronic action, **52=** electromechanical action, and **53=** electroacoustic action. Indeed, this addition was innovative, inclusive and a sufficient plasterwork at the time, but with digital instruments, software and diverse mappable controllers, this addition has long become outmoded considering the rapid innovations in this software since the late 19th century (Magnusson 2017). With works such as "Demystifying and Classifying Electronic Music Instruments" by (Bakan, Bryant, Li, Martinelli and Vaughn: 1990), this added category has been further expanded.

Insights from the revision of Hornbostel and Sachs classification of musical instruments by MIMO[29] Consortium (2011) further highlights many new categories that have been introduced for instruments in classes **1-4.** With contributions from scholars such as Galpin (1903), Baines (1976), and Montagu (2009); just to mention a few. For example: the addition of **412.15=** "retreating reeds" under the **41=** "free aerophones category", by Galpin. Montagu's **422.4=** "dilating reeds category" within **42=** "wind instruments proper". In order to avoid the continuous evocation of European brass wind, **423=** 'Horns' and 'Trumpet' additionally got replaced with **423=** "Labrosones"; thus reinforcing awareness of the fact that not all lip-vibrated instruments are made of brass (Baines 1976). It is imperative to state that, despite all these additional nomenclature and categories, the scheme has kept its fundamental objectives and structure. Perhaps we can once again cite and credit the scheme's flexibility and capacity to accommodate further findings whilst still being able to keep its initial scope.

[29] Musical Instrument Museums Online: a project created as a single access point to digital content and information on the collections of musical instruments held in a consortium of European museums.

Critiques of Hornbostel-Sachs Scheme and New Trends in Organology from the 20th Century

Of the plethora of classificatory schemes put forward by collectives and individual organology scholars, the Hornbostel-Sachs scheme can be said to have been the most widely-adopted with the greatest impact of any classification scheme till present. In instrument museums, private depository of instruments and in scholarship on organology studies, it is arguably the most cited scheme used as a reference for any other scheme. However, despite its enduring test of time and substantial influence, its limitations have also been pointed out by several writers who highlight concerns such as, that its "ethnocentric" nomenclature is derived mainly from "European terminology or those circumferential to Europe''. Furthermore, as ideas and methodologies keep changing in organology as in other fields of research (anthropology, sociology, biology), from about the 1930s a few museologists and musicologists aligned their work to this newer approach. With some interested in the details and more in the logic and completeness of a scheme (Kartomi 2001: 285).

In 1932 Andre Schaeffner, an instrument curator at the Musee de L'Homme, developed what was referred to as a "perfectly logical bipartite scheme" based on Mahillion's ideas and believed to suit instruments of all cultures (Kartomi 2001: 285). Schaeffner rejected Mahillion and Hornbostel-Sachs category of autophones/Idiophones, perhaps justified by Montando's (1919: 47) definition: "instruments in which the vibration is caused by the body, and not by a membrane, a string or, primarily, the air" (see also Kunst 1974: 59-60). Another point stressed by Schaeffner was that the presence of the Idiophones category worked against Hornbostel-Sachs' classification claim to logical structure, as they could only maintain a single character division at the highest step. Perhaps to Schaeffner, logical completeness regardless of the instrument's complexity was not negotiable when drawing a scheme, therefore, Hornbostel-Sachs' scheme, surmounting to such complexity within the Idiophones category, was not a justified reason for logical inadequacy. Schaeffner even went further in arguing that the physical structure of an instrument and not its playing method, should be the main criterion for its classification, thus at the highest level of his scheme, he divided the world instrument into two categories: **I** instruments with solid vibrating bodies. **II** instruments containing vibrating air. Despite the rigorous and extensive criticism put forward by Schaeffner's scheme, it has had no substantial impact outside of France. Perhaps due to the

fact that it has not been translated to English since its revised version in 1936, coupled with the fact that it lacked continuity with past classifications, significantly Hornbostel-Sachs' (Kartomi: 1990: 174 - 176). Between 1932 and 1987, a new trend of scholars emerged with scholarship that narrowed down topics of inquiry to detailed studies concerning particular instruments and ensembles. Collectively through their works they covered many music cultures, presented schemes that reflected the multi-faceted aspects of instruments and their social context, as well as their acoustic properties and morphological characteristics.

First of these scholars were the two Swedish writers, Tobias Norlind (1932) and Karl Izikowitz (1935); perhaps they were the vanguards and early conceptual thinkers who birthed this trend. Though Norlind was unable to put forward his own scheme; he still went forward to present his ideas in an article on musical instruments systematics, published in 1932. Norlind suggested that other concerns such as characters governing performance practice, aspects of nomenclature, geographical location and cultural history, needed to be taken into account within any scheme. According to Kartomi (1990), Norlid's article initiated a "shift away from morphological concept of instruments as it were with downward classification by logical division, to a more dynamic, expansive view of the instrument as part of musical and socio-historical behavior for which methods of multi variable upward grouping would eventually be developed" (177). Kartomi's insight can hardly be doubted, considering other scholarship[30] at the time that embraced what Norlid highlighted through this article, regardless of the fact that he was unable to present a concrete scheme as a framework to materialize his ideas. However, in just three years of the article's publication, Norlid's concerns and new ideas for developing classificatory schemes was adopted and explored even broader by Izikowitz (1935). Izikowitz was also an adherent to the era's prevailing method which classified instruments mainly according to their acoustic principle. However, he still regarded artefacts (instruments) as a cultural element, an outward form of complex ideas buried in the mind of human beings by whom it is made and used. He therefore recommended that: "A scientific investigation of material objects should be made with a view to increasing our knowledge either of a technique, which in its turn is influenced by the environment and the natural materials at hand, or of the functions of the artefact or of both" (1935: 2). In other words, it

[30] Drager (1948 & 1957), Elscheck (1969a &1969b), Hood (1971), Montagu and Burton (1971), Ramey (1974).

was an organology of musical instruments that is ethnographically derived and presented with views beyond mere systematic classification, but also the capacity to increase knowledge of the cultural context whence the instruments were made and used.

These ideas further flourished and also became inclusive in the works of the German scholar Heinz Drager (1947-57). With emphasis on the need to consider a large number of distinctive characteristics of instruments if they were to be classified in their true complexity; Drager indeed found the single and limited character division to be inadequate. Perhaps he was the first organologist to engage in highly detailed classificatory thinking, even though like Norlid, he also did not take further practical steps to develop a new scheme that would exemplify his complex concept of instruments. Drager rather added his cluster of variables or "facets" (Ramey 1974) of instrument to the entries of the Hornbostel-Sachs's scheme. These clusters included: technomorphic and acoustic facets, facets determining an instruments ability to produce single or multiple voices, facets relating to musical movements, tone, duration, loudness (Drager 1947: 12-22). Consequently, this highly detailed classificatory approach became central to Drager's second publication in 1957; an important theoretical contribution that brought about another ideological shift in the latter part of the 20th century field of organology. Insights from this work (based on Kartomi's 1990: 181 translation), clarified the limitations of downward taxonomy by logical division, arguing that it took insufficient account of the cultural history, and physiological studies of instruments. Further, Drager emphasized the importance of a broader classificatory system with the capacity to embody both the functional parts, and accessories of the instruments. Perhaps this laid the fundamental framework for a broader classificatory grouping which was achieved by adopting an upward micro-taxonomical or faceted mode of classificatory thinking; as opposed to a macro-taxonomical and downward classification by logical division.

In a decade and two years after Drager's 1957 publication, a method of close classification of musical instruments based on upward thinking was further explored and devised by Oskar Elschek in his bipartite publications (article in 1969a & a book 1969b). Elschek's work gave details on the typological method he had developed and applied to a collection of aerophones. This arguably was the product of a 1962 study group on Folk Music Instruments founded by German scholars such as Ernst Emsheimer and Eric Stockman, with Elschek and

Stockman being the group's key methodologist. They perhaps became the first music instrument organologists to develop a fully conscious theory and method of upward classification by inspection, a method obviously adopted from the field of biology. Central to the objectives of Elschek's typology was a comprehensive study on particular types of instruments (i.e. labrosones amongst a pool of aerophones). This was coupled with investigating many facets of each labrosone: their acoustics, playing techniques, their use in ensembles, their sound documentation, musical styles, their ergology, and their performers, to the socio-historical and anthropological aspects (Kartomi 1990). The contribution of this group of organologists were of considerable significance, but unfortunately not widely understood; this was partly due to the fact that its key methodological articles are discoursed in German and left un-translated to one of the popularly understood languages (perhaps English or French). Furthermore, though their ideas and methodologies are still being developed, the insecurity of conceptual or terminological foundations and unclear orientations of the discipline of organology itself can be argued as a contributing factor to the methods' unpopularity. To buttress this argument Kartomi concludes, "this often offers few guidelines by which to recognize and assess the significance of new-and old-contributions" (1990: 199).

Of course, traces of Kartomi's argument are evident if we consider the historical trajectory of organology. For instance, over a century since Mahillion published the publication of the first universally systematic scheme in 1893, we can establish that over twenty other theoretically and extensively researched schemes have been devised. However, despite the abundance of these schemes, only the Hornbostel-Sachs scheme has become well known, despite the countless critical scholarships that have pointed out its logical and multifaceted limitations coupled with its contextual inadequacy. According to Baines and Waschsmann's (1961: 3) opening paragraph to the translation of Hornbostel and Sachs (1914) scheme: "No other system of classification is more frequently quoted, nor has any later system been able to supplant it. On these grounds alone it would be difficult to write it off as being out of date". Indeed, when speaking of classification schemes within the field of musicology, it is no doubt this 1914 scheme is the most revered and referenced scheme, despite its numerous critics. However, I argue that not critically highlighting the othering notions and perhaps biased

motives that are arguably responsible for the schemes popularity and success, or singularly trumpeting its logical approach and universal applicability as the main argument why no other system has been able to supplant it, can be very narrow and misleading, critically for these reasons.

Firstly, if we consider the drastic ideological shift between pre and post renaissance classificatory schemes, we find a shift from ethical consideration to purely scientific application unto instrument classification. Further to this, is the rejection of a nominalist approach in order to apply essentialist ideologies to classificatory schemes. In other words, the objectives of previous schemes were to present a terse statement or codified scheme that emphasized conceptual ideas of instruments peculiar to a culture, by considering various facets and ethos associated with the classified instruments. On the other hand, the objectives of the latter scheme were to design a museum cataloguing system that could be applied universally; clearly this was the mainstream idea exemplified at the time, in both organological and musicological scholarship in Europe at the time. Secondly, insights from Levi Strauss' work (1966: 40 - 44), further argues why Western classificatory schemes have dominated other pre-existing schemes despite their ethical and extensive nature. Through highlighting reasons why research into indigenous classification developed so late in fields such as biology, botany, and anthropology, Strauss stresses that: Ethnologists "have often been prevented from trying to find out about the complex and consistent conscious systems of societies they were studying by the assumptions they made about the simple ness and coarseness of primitives". Further linking this lackadaisical attitude to the condescending views both travellers and ethnologists held about the intellectual capacity of the societies visited or studied.

In conclusion, perhaps the genesis of comparative musicology (pioneered by German scholars), which compared non-western concepts of music to that of western concepts, in addition to which authors wrote extensively for an entirely western and musically conservative readership. These factors, I argue, must have also consequently and massively contributed to the success and popularity ascribed to the 1914 scheme. It becomes obvious that, at play was a completely western hegemonic ideology imposed over every other. In

Kartomi's words "Clearly cognitive schemes never develop in a vacuum, and most often classification schemes tend to express their creators' cultural assumptions" (1990: 9).

Elschek and Stockmann's Typology

Taking on the ideological baton from Drager, Elschek and Stockmann first made a clear distinction of their method (typology) from the systematic approach adopted by Hornbostel and Sachs and other downward thinking taxonomists.

> "Systematics" as described by Elschek is a preliminary way of sorting out instruments into classes, in which the initial sorting is based on act of perception or intuition, and only sometimes reflects historical relationships. On the other hand, "Typology" is based on empirical observation and historical implication. He continued the comparison by pointing out that in systematics, any perceptual initial sorting soon gives way to the logically-based ordering, as the aim of reaching abstract generalizations at the uppermost level begins to be realized. Systematics, he said, is not designed to depict or classify the complex details of variable forms of the same or similar instruments, as is needed in a first study of a collection of instruments, e.g. folk Aerophones; nor is it designed to depict the complex details of historical change in instruments. (Translation by Kartomi 2001: 288).

In other words, systematics operates only on a few characters, which is then applied generally on a whole instrumentarium, while Typology is based on a holistic view of the complex individual instrument in its environmental context. Another significant argument also made by Elschek, which is relative to, and also crucial in achieving significant objectives (in this chapter and the overall thesis), is to avoid abstract conclusions of a systematic approach. Say for instance, we have to highlight the diverse musical and social context of the conchshell trumpets discussed in chapter three; adopting a systematic classificatory approach for this horn will inevitably reduce its description to a general or abstract conclusion. (i.e. **4** aerophones-**42** Wind Instrument Proper- **423.1** Natural Labrosones- **423.11** Conches-**423.111** End-blown- **423.111.1** Without mouthpiece- **423.111.2** With mouthpiece – **423.112** Side-blown). On the other hand, if a typology by upward classification is adopted in order to classify the same conch, perhaps larger variants or facets coupled with the contextual details of these conches could be highlighted. To buttress this point, and also present the advantages of a typological method if adopted for the conchshell trumpet or other

labrosones, the next paragraph shall first engage how Elschek applied the typological method to a collection of European folk aerophones.

Elschek's method to date, primarily focuses on the detailed treatment of morphological, technological, acoustic, and "ergo-logical data" (perhaps on the instrument maker), coupled with historical and sound documentations. The process begins by making a close, detailed inspection of the morphological and technological (i.e. mouthpieces, materials, finger holes) aspects of the instruments. The analyses of these measurable facets are then presented in graphic sketches, or logograms, like those used in the field of electrical engineering, and in dance notation (Elschek 1969b: 13). These sketches are then classified according to increasingly higher levels of generality, in order to isolate "variants, groups of variants, and types[31]"; these were working terminologies Elschek used in achieving the upward micro taxonomical process. It is important to state that despite the comparable nature of the folk aerophones Elschek was working with at the time, however, he was certain not "all instruments were closely comparable"; only those with essentially the same or similar "essential" (technical, acoustic) characteristics belonged together. Perhaps for Elschek, highlighting these differences no matter how minute they were was what justified the adoption of a micro taxonomical method (typology) over a systematic approach (macro taxonomy).

Hence with aerophones that were comparable, two kinds of variability were distinguished: quantitative and qualitative. Thus, if two handmade kudu horns vary from each other in ways that do not affect the sound produced, i.e. the degree of craftsmanship and monetary value; then their differences are classed quantitatively, and the two instruments are grouped as "instruments with identical characteristics". If, however, two handmade conchshell trumpets vary in aspects of the sound produced (timbre, register, pitch), then the differences between them are classed as qualitative, and they are said to be two variants within a type; the variant being the characteristic difference and the type being the conch (the material they are made of). Though the number of characteristics said to determine a variant might vary according to the nature of the instruments being researched and their resulting analyses, what

[31] A collection of variants is called a type; it is a model or center point with variable realizations. To constitute a type, two or more instruments must have several points of similarity, not just one or two (Elschek and Stockmann 1969: 22)

becomes the distinguishing factor is the presence or absence of any stable character that determines or affects the sound produced. This variant is again distinguished from one another by classing them into "universal or a particular character". For example, the creation of the "hole" that houses the neck of the mouthpiece, or through which air is blown into the conch is a universal characteristic, but the "position" of the same hole (i.e. end-blown or side-blown) is a particular characteristic (Elschek and Stockmann 1969: 21). Hence a "Type" has a unifying factor of grouping similar instruments either into a quantitative or qualitative group, and even within the qualitative group other variable characteristics can also be subdivided into either universal or particular characteristic. To summon the words of the authors themselves as translated by Kartomi (1990);

> "A type is not a stark, unchangeable model and it is subject to constant change: develops at a particular point in time, lives for a particular period, and can be transformed into other types by innovation. Unlike systematics, which devises a theoretical, universal, logically based, hierarchically built up and therefore static and ahistorical classification system; typology is first and foremost empirical-historical research. It is freely applicable and must continually be adjusted according to the actual instruments being researched. Both typological and systematic investigations may finally be presented in a hierarchy of steps moving from the group of identical instruments to the variant, from the variant to the type and then from the type to the group of types" (Elschek and Stockmann 1969: 18-22).

Once these measurable morphological and technological facets have been established and documented, Elschek further suggests that the socio-historical, archaeological, iconographical, anthropological and music-stylistic aspects of the instruments be presented in written form.

Central to Elschek's argument was that a typological method aims to highlight the precise, ordered study of various details from a low to medium level classification of groups or variants of instruments. While systematics aims at information storage and retrieval from the high-to low- level classification of specimens (instruments) that made up the whole instrumentaria, further drawing broad comparisons and reaching abstract conclusions. However, despite drawing these sharp comparisons they still concluded by saying the two methods are complementary and both clearly need further development. They did not recommend throwing out the baby (Hornbostel and Sachs's scheme) with the bath water;

rather they wished to apply the typological method in concert with the systematic. In other words, they suggested a taxonomical study of instruments that begins by first identifying, and then moving into categories with the aid of Hornbostel and Sachs or another systematic scheme. Hence at the second stage each instrument should be studied in detail and classified typologically into variants, group of variants, types and group of types. At the third stage they recommend, the low-level groupings of the Hornbostel and Sachs scheme should be compared with those derived typologically. Hence the application of both methods consequently alternates between downward, macro taxonomical thinking and upward micro taxonomical thinking, perhaps this might help accommodate as many facets of the instruments as there could possibly be.

Chapter Summary

An organology beyond cataloguing and classification has been adopted as a contextual framework to engage the historical trajectory of classification schemes and their authorship's methods and taxonomic outcomes. Insights from relevant scholarly works cited within the framework were used as a theoretical lens to view the deeper layers of meanings embodied by a sound-producing instrument. Thus, the discourse presented within the chapter was able to establish some significant arguments. Firstly, sound producing instruments often carry subjective meanings, which are fundamentally influenced by conceptual ideas held across cultural communities. Unquestionably, these ideas are imperative to developing classification schemes that perhaps could help explain a society's social structure and sociomusical concerns associated with instruments. Secondly, classification schemes are intellectually coded terse statements of a cultural community and their resultant categories, conceptual ideas and character of divisions not only reveals the variety of instruments known to the cultural community. It goes further in influencing how they compose and respond to the music itself, it becomes a practical method and tool to also intellectually demonstrate ideas, myth and religious beliefs associated with these instruments. This approach is evident in both oral and literate societies where instruments play a significant role in social activities that constitute their culture. Thirdly, central to the objectives on arguments and comparisons made was to first understand why it becomes important to classify such things as musical instruments or sound producing objects culturally significant to each society. So also, to

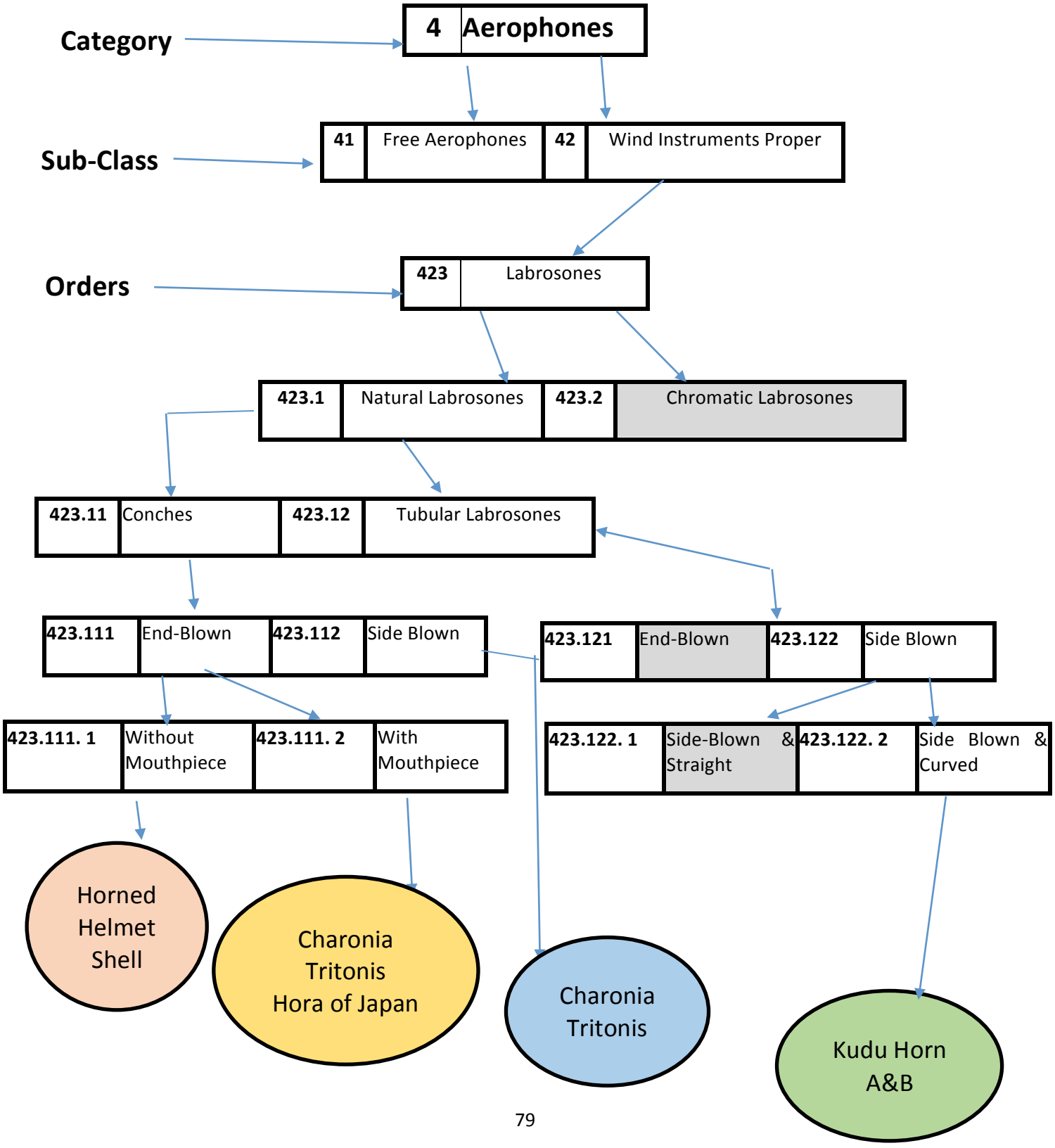
establish that classification schemes are not conceived in isolation of their author's cultural concept of music, they most often tend to reflect their author's or the collective's cultural assumption. Thus, this established argument was relevant to engaging merits and possible demerits of various methodological approaches: single character by downward logical division (macro taxonomical), and a typology study of individual instruments based on upward thinking (micro taxonomical).

In what follows, this thesis seeks to incorporate formats from both methods in order to attempt a rethinking towards a broader approach in the classification of labrosone. A proposed classification scheme that is both systematic and empirical; using the conchshell trumpet and kudu horn as a case study. The overall research goal is to use the outcomes of this present research as a working scheme, which will then be developed in future PhD research, in order to adopt a wider range of labrosones. Furthermore, this later research intends that the Kirby collection at the college of music will provide a practical example through which these new methods can be applied. This will be presented by using a key diagram to demonstrate a typology study of labrosones classified under the aerophone category in Hornbostel-Sachs scheme. The Key diagram is an arrangement of different oppositions in several steps based on a method of logical division. This will enable the user to readily identify a specimen in a body of other objects that might share similar features or characteristics i.e. locating a conchshell trumpet from the long list of instruments within the Hornbostel-Sachs scheme. In other words, it serves to locate the instrument by means of deduction, and allows for a direct identification and narrowing of the classification scheme to a very specific instrument within a type or category (i.e. labrosones in the long list of aerophones).

The structure of a key diagram depends on the number of steps delineated, the number of classes distinguished, the number of characters guiding each step, and the degree of symmetry among instruments under the category being studied. With regards to the key diagram in the next chapter, the term 'category' is the highest or most abstract level of the classification scheme, physical characters distinguish a 'class' and each 'step' is a stage of subdivision of a 'class' depicted with the use of a downward arrow. The figures at the top of each rectangular box are the instruments cataloguing numbers, like that of the Dewey's

library system used in sorting and identifying books. The ingenuity and unique feature the adoption of this numbering system gave to Hornbostel-Sachs systematic scheme, was that every further subdivision is indicated by adding a new figure to the right hand end of the row, whilst the zero before the decimal point being always omitted. Thus, it becomes possible not only to pursue specification to whatever limit one desires and with never any trouble in the manipulation of the numbers, but also directly to recognize from the position of its last figure the ranking of a given term with the system (Baines and Wachsmann 1961: 10).

Fig. 12. A Typology Classification of Five Labrosones Using a Key Diagram



See images of the catalogued labrosones above on pages 73 – 75. The above key diagram (fig. 12) has adopted only two steps (Subclass '**42'** and Orders **'423'**) from the **4th** Category of the Hornbostel-Sachs (1914) scheme in order to firstly sort these instruments into classes, and secondly to systematically highlight the number of instruments being ordered. The key diagram has also been used to typologically narrow down the classification and cataloguing section of the organology scheme, intended for the five labrosones at the bottom of the classificatory scheme. The shaded boxes are categories that do not apply to the labrosones ordered within this scheme, they have only been included in order to guide and inform the reader of relative classes that do exist but do not apply to this specific scheme.

Kudu Horns and Conchshell Trumpets.

These instruments fall under the **4th** category (aerophones) due to the nature of their sound production. According to MIMO (2011) revised version of the Hornbostel-Sachs (1914) systematic scheme; "the air itself is the vibrator in the primary sense". In other words, sound production of these instruments is totally dependent on the amount of air blown into them which further vibrates in order to create sound.

The systematic scheme further divides the aerophone category into two major subclasses: **(41)** Free Aerophones, the vibrating air is not confined by the material used in constructing the instrument. **(42)** Wind instruments proper, the vibrating air is confined within the material used in constructing the instrument itself. The kudu and conchshell trumpet fall technically under this latter subdivision/class due to the confining shape or ability of their material body to retain the air blown into it, which further vibrates within the confined space in order to create sound.

The second hierarchical step in the **4th** category of the MIMO's revised Hornbostel-Sachs (1914) systematic scheme is labelled "Order", at this step the latter subclass (wind instruments proper) is again further divided into four ordering groups: "**420** Edge-tone instruments that are not flutes", "**421** Edge-tone instruments or flutes", "**422** Reedpipes", "**423** Labrosones". These groups were differentiated by the technicality employed in the sound production of wind instruments that fall under each group. In order words, the positioning of the hole into which air is blown or through which an accessory, such as a

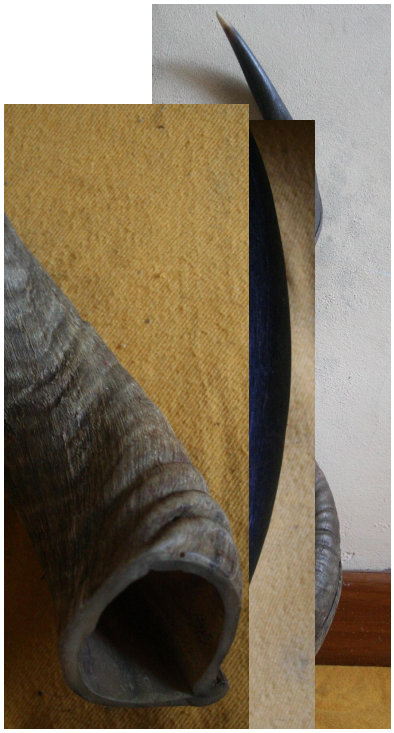
mouthpiece or reed is inserted in order to aid sound production, inevitably becomes a determining factor. Due to the specificity of this chapter, the 4th "Order" (**423** labrosones) naturally becomes an area of interest. According to the scheme's definition, the air stream of wind instruments that fall under this ordered step "passes through the player's vibrating lips, so gaining intermittent access to the air column which is to be made to vibrate" (Baines and Wachsmann 1961: 10). In other words, the player's vibrating lips becomes a technical support in aiding and determining the pitch of sound produced through the air column of labrosones; therefore, horns and conchshell trumpets technically fall under these labrosones.

In order to avoid a continuous blanket approach or evocation of European brass wind standards, and to reinforce awareness of the fact that not all lip-vibrated instruments are made of brass (Baines 1976), labrosones were differentiated with the use of a lexicon (**423.1** Natural and **423.2** Chromatic). With the natural being those without extra devices to alter pitch other than lengths of tube (crooks etc.) to set the nominal pitch preparatory to playing. The chromatic are those with extra devices (valves, triggers etc.) to alter the pitch while playing. Again, due to the instrumental scope of this chapter, focus will be drawn to the natural since the five labrosones highlighted at the bottom of the typological diagram technically fall under this division.

423.111.1 End-blown (Horned Helmet conchshell trumpet)
Shell length: 24.6cm. Bell diameter: 14.9cm. Photos of the author's personal collection.

423.111.2 End-blown with mouthpiece (Charonia Tritonis conchshell trumpet) Locally referred to as the *Hora* in Japan.
Length: 25.4cm. Length of Crook/mouthpiece: 8.6cm. Bell diameter: 8.6cmPhotos by author of author's personal collection.

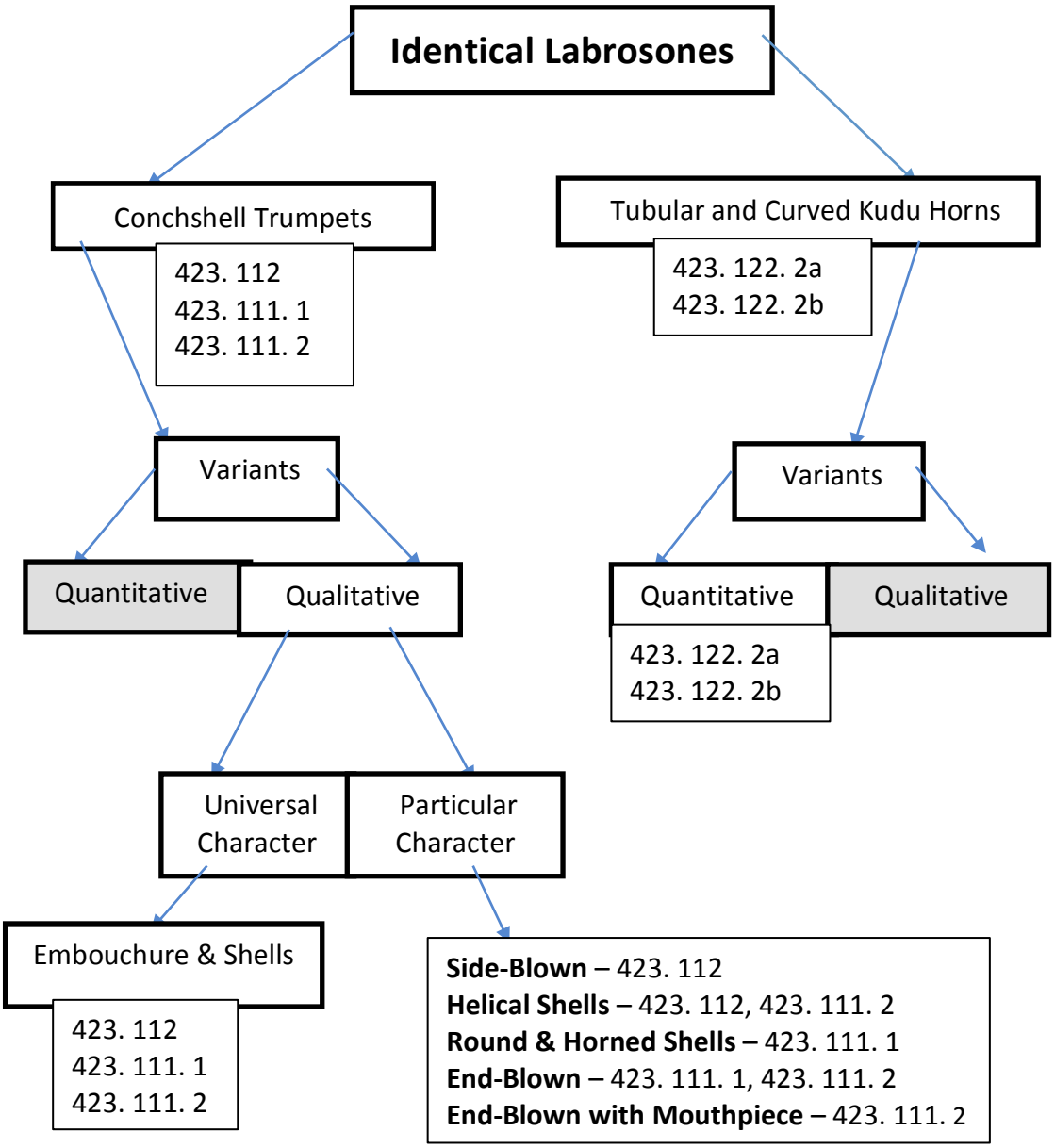
423.112 Side-blown (Choronia Tritonis conchshell trumpet) Length: 19.5 cm. Bell diameter: 9.1cm. Photos by author of author's personal collection.



423.122.2 Side-blown & curved (Kudu horn. A) Length: 1m. Bell diameter: 6.7cm. Photos by author of author's personal collection.

423.122.2 Side-blown & curved (Kudu horn. B) Length: 1m.27cm. Bell diameter: 9.3cm. Photos by author of author's personal collection.

A collection of the five labrosones.



(Fig. 13) Key diagram showing identical characteristics of the five labrosones

The identical factors that have been considered in order to group these five labrosones into two separate boxes have been determined based on their material and morphological similarities: (1) trumpet made from conches, (2) tubular and curved kudu horns. The typology then progresses by redistributing labrosones grouped in each identical box into two groups of variants: **1** - those with morphological differences that do not affect the nature of sound produced i.e. degree or craftsmanship, color shade of the material used, aesthetic accessories. **2** - those with morphological differences that does affect the nature of sound produced, like technical accessories, length/shape of the tube or conch, positioning of the embouchure (side or end-blown). This latter group of variants are further redistributed into types: **2a** - those with universal characters (embouchure and shells), **2b** - those with particular characters (mouthpiece, type of shell). The boxes shaded are relative variants that do not apply to the labrosones ordered within the scheme. In what follows, further socio-musical context of these labrosones will be presented, as suggested by Elschek and Stockmans (1969) typology and micro taxonomical approach towards a new organology.

Kudu Horns

The two kudu horns classified within this scheme are horn specimens from Woodland Antelopes also referred to as Greater Kudu or Koodoo. These particular genus and species (*Tragelaphus. Strepsicenos*) of kudu are known to inhabit the eastern and southern African region. Greater kudus are one of the largest species of antelope with their Bulls (adult male) weighing up to 190 - 270 kg to a maximum of 315 kg, large horns if it were to be straightened would probably reach an average length of 120 cm (47 in) to a maximum of 187.64 cm (73.87 in). A very peculiar feature of the greater kudu horn when compared to other antelopes (i.e. Sable antelopes, Large antelopes) is that they have a twisted horn that tends to diverge slightly as they slant back from the head. The twisted horns only begin to grow when the bull is between the ages of 6–12 months, twisting once at around 2 years of age, and not reaching the full two and a half twists until they are 6 years old; occasionally they may even have 3 full turns. On the other hand, their Cows (adult female) are hornless and without a beard, so also with a smaller body mass weighing between a minimum of 120kg to a maximum of 210kg (Nesting & Arctander 2001, Mills & Biggs 1993, Owen Smith & Mills 2003).

The kudu horn is a significant sound producing instrument and material culture (Technomic, Sociotechnic, Ideotechnic) with a long historical trajectory peculiar and symbolic of the cultural traditions of people known to occupy the eastern and southern region of Africa. Its social significance (ethos, functionality, symbolism) and social life (thing power, material agency) arguably has been, and still is relevant to the social fabrics of these regions. Resiliently adopting diverse indigenous names, aesthetic preference and technical craftsmanship as it travels through each ethnic group within this region that has harnessed its multifunctional nature.

Sound producing instruments such as kudu horns have been common among the Bantu peoples of South Africa. They are sounded by blowing air through a rectangular shaped embouchure (often at the side of the tip end) and simultaneously causing the lips to vibrate in order to make the air-column in the tube of the horn to also vibrate. This action (if done right) automatically produces sound which varies in texture and pitch, depending on the technical ability of the player and the length of the tube (horn). Side-blown kudu horns are characteristically associated and stylistically common to the music cultures of peoples from Eastern and Southern Africa (Venda, Pedi, Abaluhya, Tanzania, Xhosa and Zulu).

Amongst the Venda people it is indigenously referred to as *phalaphala,* and is a very important instrument played only by men for official purposes and for all kinds of ceremonial uses, and is also a social (rather than individual) property collectively belonging to a kraal. In earlier times, a chief often had an official signaler or envoy designated to summon his subjects to work for him on occasions when co-operative work is necessary, or to call dancers from surrounding kraals to the chief's in order to execute a national dance known as *tshikona*. An important Venda practice also associated with the horn is to announce when the star 'Sirius' appeared in early winter mornings. This signaled the commencement of harvesting, and the first man to notice it climbed on a high hill and blew the *phalaphala* horn in order to spread the news; this act came with a reward of a cow, which was presented to the player by the chief. Other uses include sounding the call to arms, which on hearing it; warriors would seize their weapons and report at the chief's kraal. These significant uses of the *phalaphala* by the Venda's are practical examples of two subclasses of material culture (technomic and sociotechnic) argued for in the latter section of chapter three of this thesis.

Similarly, the Pedi refer to the kudu horn as *phalaphala* and employ the usage of the horn in the same instances, though with slightly different practice. For instance, it was taken into battle alongside with other instruments, and each clan was taught to recognize the sound of its *phalaphala;* perhaps differentiated by texture and specific intervals as alarm signals. It was blown to initiate engagement with the opponent on the battlefield, and in the event an important herdsmen or chief is killed in the cause of the battle, as a sign of respect the *phalaphala* is not blown even if victory was attained. However, if no one of importance is not slain during battle and victory was attained, the *phalaphala* is traditionally blown to announce the victory. Ideologically in this instance the *phalaphala* and its sound symbolically embodies royalty and victory; hence this peculiar practice again can be argued as a practical example of one of the three subclasses (e.g. ideotechnic) that material culture such as the *phalaphala* can be classified under and understood.

It is imperative to state for possible linguistic variation and perhaps for semantics consideration, the name kudu refers biologically to one of other animals (sable antelopes, Oryx) that belong to the family of *Bovidae* and from *which* the specimen (horn) is gutted from. Furthermore, animals within these family are generically referred to as *kwatha* by the indigenous peoples of the southern region of Africa; with each ethnic group having its own indigenous names given to the animals' horn when made into a labrosone. Though there are instances where a particular animal horn within this family is preferred to make a labrosone, however, due to the extinction of the preferred animal, other animals within the same family are commonly used whilst their indigenous name and technicalities (side-blown) still stays the same. I.e. the Venda's *phalaphala* and the Chwana's *lepapata* were labrosones preferably made from the horns of sable antelopes in earlier times. However, as hunting of these animals became difficult over time due to their extinction and perhaps protection of game animals, the kudu horn has been used as a replacement without a change to its indigenous name, *phalaphala* (Kirby 1953). This also is the case with communities in Eastern Africa, i.e. in the *Abaluhya* community of Western Kenya, *olwika* is an indigenous name used in referring to labrosones (i.e. horns) made from any Antelope, Cow, Buffalo, and it is used for sending messages and for ritual purposes (Odwar 2006: 89). Another example is the *baragumu,* an indigenous name used in Tanzania to refer to hunting horns made from any antelope, it is

often played by antelope hunters during the ritual held before their departure on the next hunt (Beede Gallery of the National Music Museum).

This particular specimen classified within this scheme was generously gifted to me by Mr. Calvin, a South African eco-activist, recycling advocate and a co-owner of a zero-waste store that provides groceries and other recycled goods to an eclectic community in the Muizenberg village in the Western Cape Province of South Africa.

Conchshell Trumpets

The three conchshell trumpets classified within this scheme are external skeletons which were once homes to a class of marine animals known as Gastropods, these are invertebrates that walk using their stomach as a foot while carrying their helical shells on their back (Brusca, R. C.; Brusca, G. J. 2003). Though a variety of shells of different genera are known to exist around the world, however, only shells of Gastropods that are large enough serves as trumpets, while smaller ones are used as whistles. Those large shells that become trumpets often inhabit and tend to prefer warmer waters to colder, hence they seem to thrive in the central belt of the world's oceanic waters. Marine shells are one of the earliest material objects which have been used as trumpets in most oceanic communities in the easterly regions in East Africa, Europe, around the Mediterranean, South-East Asia, Oceania and the Americas. However, their usage in inland communities in Tibet and Afghanistan far from the shores have also been documented; perhaps this is due to their economic value, religious importance and multi-layered functions. Furthermore, due to the resilient nature of the conch shell (i.e. waterproof, its material resistance to decomposition, its warm and far reaching sound) which has also contributed to its rich sociocultural significance, the conch-shell trumpet can be argued as humanity's earliest type of trumpet. The term "Conch-shell" is tautological, given that the word conch means shell and derives from the Greek *Kanche* or *konchos and* Sanskrit *conkha,* hence the commonly used word conch-shell. It is commonly used for signalling, specifically as foghorns by boatmen in coastal communities, however there are other instances and contexts where its usage are also prominent i.e. for magic,

ritual processions, religious practices and in other musical instrument ensemble performances.

Horned Helmet Shell

Cassis. Cornuta commonly referred to as horned helmet shell is one of the largest species in the class of Gastropods and of the helmet shells: queen, king, cameos and red helmet shells. Horned Helmet shells are large and heavy aquatic species with lengths that vary between 50mm to 410mm, unusual horn-like knobs, a wide but narrow bell and an often pink-like flat base. They are known to inhabit the coastal regions of countries bordering the Indo-Pacific areas, these are the biogeographic region of the earth's seas comprising of, the tropical waters of the Indian Ocean, the western and central Pacific Ocean: South Africa, India, Indonesia, Japan, Philippines and China, Island countries in the Oceania (Rosberg 2012, Steyn & Lussi 2005) .This particular Horned Helmet shell classified within this scheme was purchased at a shell shop in Kalk Bay, a popular beach community in Muizenberg, Cape town South Africa. Probably must have been collected by the shop owner or brought there from the north of the country (Kwazulu Natal); though I tried to get the specifics from the vendor at the shop but she seemed unsure of the details of the shell's journey to her shop. However, I have been able to gather more contextual detail of the shell through other secondary sources.

Among the Negritos in Philippines (Agta, Aeta, Ati, Ata and Batak), peoples also believed to be the oldest inhabitants of the country, trumpets made with the Horned Helmet shell is indigenously referred to as *budyong* (Jose 1998: 304-305); perhaps this is also a generic indigenous name for conch shell-trumpets. In Indonesia, among the Orang Suku Laut peoples in the Daik-Lingga area of the southwest Riau Island, which lie between Sumatra and Borneo, specimens of the helmet Conch-shell trumpet are surprisingly side-blown. This is a peculiar occurrence due to the fact that other examples of this particular conch horn in other researched coastal communities are commonly end-blown, unfortunately reasons for this technical and aesthetic preference is still a subject of inquiry (Montagu 2018: 97-98).

In the Oceania (Melanesia, Micronesia and Polynesia islands), apart from signalling, it is also used for wading of evil, ghosts, bad weather, earthquakes, and epidemics, eclipse and also rain (104-105). According to Hans Fischer through Montagu (2018), in Micronesia and the Western region of Polynesia to be more specific, conch shell trumpets made from varied species of Gastropods are traditionally associated with different gods. They are revered sound instruments which are stored in cult houses, and strictly designated to be blown by the priests and chiefs; a significant example of an ideotechnic material culture.

Charonia Tritonis Shell[32]

These species of conch shell are also one the very large sea snails, reaching up to 60cm in shell length, and like the helmet shells they also inhabit the Indo-Pacific areas with the Red Sea included. Apart from their common use as trumpets, they are also commonly used as decorative objects; perhaps due to their attractive brown and orange stripe-like patterns. According to Ralph Linton's 1933 report cited in Montagu (2018), the triton shell is indigenously referred to as *antsiva* (also a generic name for trumpets on the island) by the Tanala peoples of the Malagasy highlands. The triton shell on this island are all side-blown conch shell-trumpet used at funeral services, played as a sacred instrument for sacrificial offerings, and also for alarm signals. In Indonesia, *ntoeantoeangi* is an indigenous name the Poso Toradja peoples (inhabitants of the northern side of the central body of the island of Sulawesi) use to refer to the triton shell. The conchshell trumpet made from these species are also mostly side-blown on this island, and in earlier times they were only allowed to blow it to warn neighboring villages in the event of an incoming danger. Further to this, the sound of the triton shell was believed to call the wind spirit for calm when at sea (Montagu 2018). Considering the diverse functions of the triton shell given in both islands, it is no doubt the horn is a significant sound material culture (technomic, ideotechnic, sociotechnic) crucial to the social fabric of both islands. The triton shell ordered within this scheme was gifted to me by the owner of a restaurant I patronized at my last visit to Kesennuma city, Miyagi Prefecture in Japan.

The *Hora/Horagai,* is an end-blown trumpet also made from the shell fish Charonia Tritonis, technically crafted with a copper mouthpiece and it is symbolic and religiously significant to

[32] also known as Triton Shell

the practice of esoteric Buddhism in Japan. It has and is still revered as a ritual instrument according to the oldest surviving records from the Nara prefecture on esoteric forms of Buddhism; shugendo (mountain worship) being the most popular of these forms. It is a religious instrument that is believed to make a man wise, to chase away beast and venomous snakes before going into the mountains, used to give instructions on *shugendo* and it also used to accompany *Santra* chanting. Based on records from the Buddhist scriptures, the sound of the *hora/horagai* is likened to the roar of the lion and it also has the power to suppress the evil mind. Further to this, each part of the triton shell is compared with a mandala and the entire shell is the embodiment of *Samaya* mandala. Apart from this significant association to religious practice and indigenous ethos, it is also a significant signalling horn used for battle by the military in Japan (Fukui 1994). The multifunctional purpose and symbolism of the *hora/horagai*, can also be argued as a significant sound material culture that is ideotechnic, technomic and sociotechnic as it adopts diverse functions in each contextual instance. Professor Umeya Kiyoshi, a visiting professor from Japan at the anthropology department at the University of Cape Town, gifted the hora/horagai ordered within this scheme to me.

Chapter Summary

As mentioned earlier, central to Eslchek's objective was to highlight the complex details, and as many variants as possible of the same or similar instruments (conches, Kudu); also imperative was to contextually present both empirical observation and historical implications of instruments classified within the organological scheme. In other words, central to the scheme's objectives was to combine both macro/micro taxonomical methodologies that perhaps highlighted broader aspects (musical and socio musical) of the instruments being classified; arguably these concerns were not central objectives to the Hornbostel and Sachs (1914) systematic scheme.

One of the ways Elschek practically presented this new methodology was to first sort these instruments into classes using the first two steps of the Hornbostel and Sachs scheme; as done already using a key diagram in the opening of this chapter. The process then progresses by making a close, detailed inspection of the 'morphological and technical' (I.e. mouthpieces, materials, embouchure) aspects of the instruments. The analyses of these measurable facets

are then presented in graphic sketches, or logograms, like those used in the field of electrical engineering, and in dance notation (Elschek 1969b: 13). However, for this thesis, these measurable facets are rather documented by taking as many photographic perspectives of the five labrosones at the bottom end of the typological diagram. These sketches (photographic perspectives) are then classified according to increasingly higher levels of generality, in order to isolate “variants, groups of variants, and types; working terminologies Elschek used in achieving the upward micro taxonomical process. The final section of the scheme then proceeds to present in written form, the socio-historical details and music-stylistic aspects of the labrosones.

In order to broaden the traditional scope of organology established in the systematic scheme of Hornbostel and Sachs, it then becomes imperative to expand the schemes objectives by adopting a methodology that combines insights from both macro/micro taxonomical approaches. A new approach to organology methods, that decontextualize sound instruments as lifeless objects ordered within a scheme. Further highlighting significant variants and giving context which perhaps can take instruments away from a statutory museum position, to that which acknowledges the active ability of the instrument to be alive and relevant, to be symbolic and embody affect.

Chapter 6

Overall Conclusions and Recommendations

'The Resilience of Labrosones Bordering the Indian Ocean' embodies the geographical scope and ideological parameters that have guided discourse and theoretical narratives such as the social life of sound instruments, and an organology beyond cataloging and classification. This approach has contextually and practically contributed to achieving both the research objectives of this thesis and scholarship aims of the Re-Centering AfroAsia project. Highlighting ideas around material culture, material agency, and gendered natures of sound instruments has provided a theoretical lens through which the research could acknowledge these sound-producing instruments as constitutive of, rather than incidental to, these cultural communities. The significance of labrosones to sacred practices of magic and religion as signaling instruments from the military to fishing traditions, have been argued as factors that have made, and continue to make them relevant to this present day. This significance is exemplified in their manifestations as symbolic and culturally significant sound-producing instruments, which were also put forward as technically crucial to sustaining the social fabrics of both coastal and inland communities studied within the thesis. Together, these factors and their manifestations both historic and contemporary have been helpful in theoretically and practically engaging a broader discourse on the capacities of these horns, and in giving context to the research's concept of resilience.

The opening poem creatively captured the diverse materials used in making these different horns and trumpets, the multi-functional capacity of them and their sound in sustaining cultural traditions, and how they have been gendered through socially conceived ideas of gender. The introduction then took the ideological baton and presented the overall research scope, its objective, its questions, its methodology, and how these are philosophically rooted in the research paradigm of pragmatism.

The first chapter was presented to introduce the overall intention of the research in a creative yet academically sustained manner. This design was also used to initiate the theoretical parameters of the thesis, easing the reader into the complex intersections of

theories. The second chapter was not only conceived to present the research's conceptual framework and literature; but to form an introductory tool to establish the interdisciplinary nature of the research.

As has been presented, the ingenuity of drawing conceptual frameworks that stretch beyond ethnomusicology into fields of study such as anthropology and musicology allowed for a broader discourse and the intersection of ideas. It helps with conceptual tools that contributed critical perspectives and insights with which to begin conceiving of instruments beyond material objects that are randomly situated within a cultural group and rather objects that are used multi-functionally. Equally, through the scholarship engaged in this thesis, we can conceive of these sound-producing objects as socio-musically significant and constitutive of cultural communities and the specific traditions that define them. Further, as instruments, where the access to them is often determined through socially constructed ideas of gender and where the capacity and agency they hold render them symbolic have all made these instruments worthy of study.

In other words, chapters one to three have chronicled labrosones and their sound, like avatars from Hindu mythology (i.e. Krishna, Shiva), they embody, represent and testify to the diverse meanings, ethos, and indigenous names associated with labrosones that arise from their socio-musical significance. Despite their long historical trajectory, like hemp plants, the multifunctional quality of labrosones has seen them woven into social fabrics and cultural traditions by these communities. The ritual chants from Tibetan monasteries to that of the Hindu and Buddhist communities beyond Asia are not complete without the playing of the conch. Boatmen in Chekiang, Shanghai, and other coastal communities run the risk of colluding into each other's boat without the use of the conch as a foghorn. This also applies to the *kudu* horn and the Venda chiefs and kings; their regalia are incomplete without the blast of the *kudu* horn that herald their coming and signify the extent of their might. Beyond objects carved out of the shells of marine animals or horns of *bovidae* mammals, the socio-musical significance of these labrosones is a factor that has allowed them to manifest in diverse ways, attributed many meanings, and as a result has made them resilient.

The ideas unpacked and critically engaged within the first three chapters, became an intellectual foundation, convincing case and contextual materials the thesis then used in

navigating the musicological turn in the fourth chapter. Chapter four engaged, expanded, and deconstructed Eurocentric ideas propelled and normalised in the post-positivist paradigms. I argue that these have shaped and continue to shape how the term organology is conceived. To this I offered the suggestion of a broader approach to organology's systematic method embedded in the classification schemes of V. Mahilion (1880) and Hornbostel-Sachs (1914). The chronological study of classification schemes, coupled with theoretical insights that have influenced the taxonomical objectives of classification schemes, gave further context and provided ideological material to argue for a broader methodology for organology.

Chapters four and five presented the historical trajectory of classification schemes; from the Chinese *Pa Yin* to the Hindu *Natyasastra*, also crossing into Europe through Mahillion and Hornbostel-Sachs'. Engaging insights from these schemes, the thesis was able to present the following findings;

- Sound-producing instruments often carry subjective meanings, which are fundamentally influenced by conceptual ideas of music and instruments, held across cultures. Consequently, these ideas become major factors that determine the taxonomic outcomes of a classificatory scheme, either culture emerging or an intellectually imposed scheme.

- What becomes apparent in any classification scheme is its authorship's methodology; either systematically ordering the instruments within the scheme, or extensively unpacking various morphological facets and cultural phenomena of instruments ordered in the scheme.

- Classification schemes are terse statements and emerge in an intellectually coded format, which if understood, can be used to explain the structure of a society, as well as their dominant ideas of what music is.

- Classification schemes are not ordered in isolation or developed in a vacuum, rather they most often reflect their creator's or collective's cultural assumption.

Chapter four went on to engage insights from twentieth century organology scholars such as Elschek (dates) whose empirical ideas of organology sought to broaden the traditional scope of organology. The findings from this chapter became the theoretical foundation that supported the construction and design of the typology study in chapter five. This chapter used a key diagram to demonstrate a typology classification scheme combining methodologies from both macro and micro taxonomy, in order to achieve an organology beyond cataloging and classification. It is important to state that the Hornbostel-Sachs systematic scheme is suited to cater for a broader category of instruments, whereas a typology study, as presented in this thesis is an empirical study of types, morphologically and contextually focused that highlights as many variants as possible of individual instrument ordered within a classification scheme.

The theoretical discourse in chapter three used tools of thinking to give context to the resilient nature of labrosones and to argue for a classification system that acknowledges; (1) the gendered nature, (2) social-musical significance, (3) material agency, and (4) cultural symbolism of labrosones have contributed immensely to broadening knowledge about these instruments, their historical trajectory and how they became and continue to be associated with sustaining specific traditions in these cultural communities. These are insights the research hopes will deepen their importance as tangible objects whose conceptual ideas are worthy of study within organology's classificatory paradigm. Furthermore, the interdisciplinary nature of the literature has allowed for an intersection of academic disciplines and ideological connections of related 'communities'. These communities go beyond the physical spaces occupied by a collective as shown in the distribution study, and can be conceived as a community of scholars and their ideas, as was demonstrated through the chronological study of organology scholarship. In hindsight, we can appreciate a common thread that runs through both these types of communities; instruments are crucial to sustaining cultural traditions, they are more than objects carved out of raw materials, they are tangible sound-producing objects with a social life and these characteristics deem them vital to their classification.

Despite the limitations around the use of secondary data that were outlined in the introduction, the absence of a fieldwork component does not call into question the

authenticity of the secondary data presented. Rather, the use of the selected secondary sources is justified through the comprehension and applicability evident in the scholarship. The integration of a recital, which explored the labrosones in an alternative performance context, also contributed to expanding often static and archaic ideas of indigenous instruments, emerging from the misinformed social circles of museum collectors and other repositories.

This research is an ongoing study that requires further investigation in order to better address the research limitations, which is something I hope to do in my PhD. The theoretical intersectionality that this thesis presents and the call for a reformulation of organology has the potential to broaden the intellectual scope of labrosone organology and pedagogy at the South Africa College of Music at the University of Cape Town.

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Appendix

(Fig. 1)
Side-blown *Bursa* conchshell trumpet
(Montagu 2018: 48)

(Fig. 2)
Side-blown Choronia Triton conchshell trumpet
Locally referred to as *Antsiva* on the Malagasy Island
(Montagu 2018: 119)

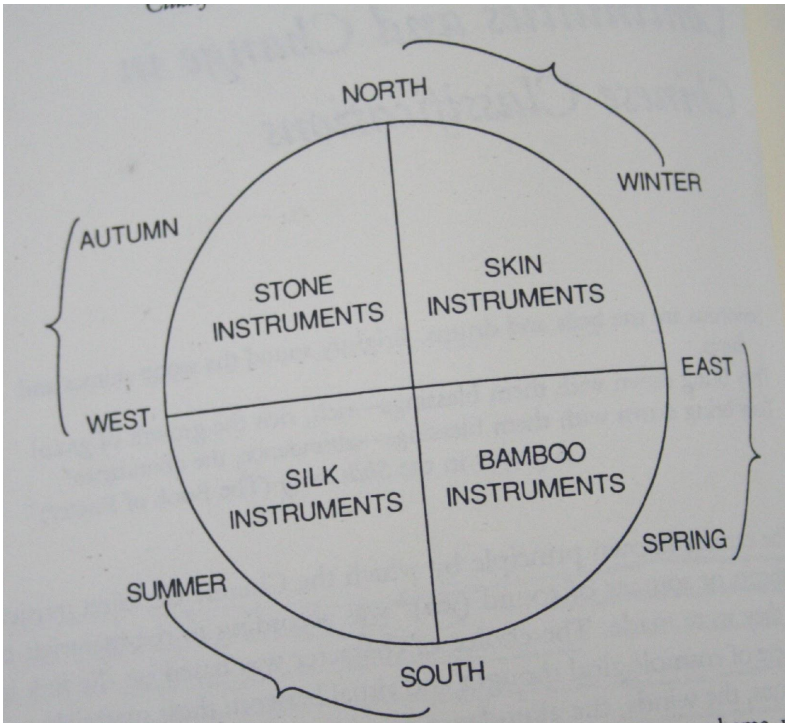
(Fig. 3a) Strombus Peruvianus Conchshell
Available at https://upload.wikimedia.org/wikipedia/commons/8/84/Strombus_peruvianus_15a.jpg
(Has not yet been made into a trumpet)

(Fig. 3b) Cymatium Pileare Conchshell
Available at http://www.jacksonvilleshells.org/martinia.htm
(Has not yet been made into a trumpet)

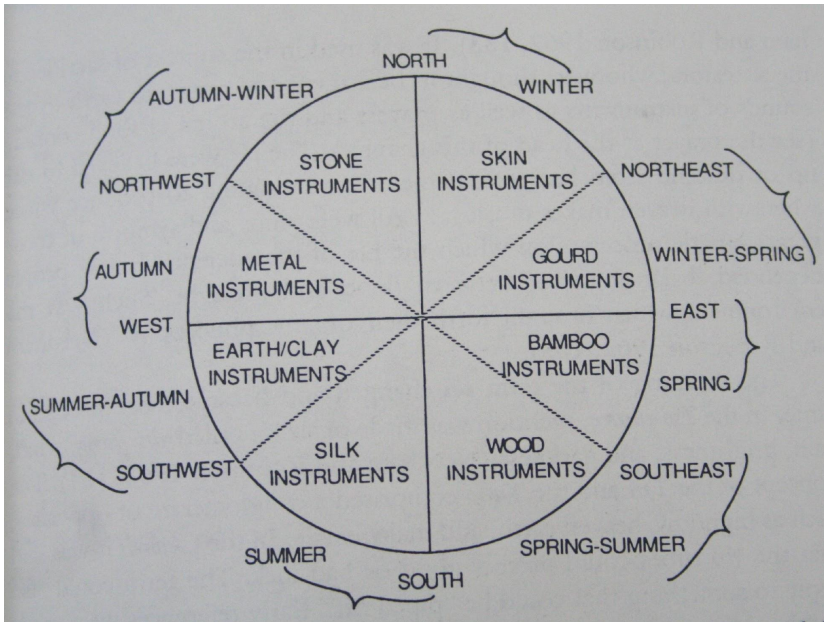
(Fig. 4) End-blown Turbinella Pyrum conchshell trumpet
Locally referred to as *Chank* in India
(Montagu 2018: 67)

(Fig. 5) Hemifusus Colosseus Conchshell
Locally referred to as *Hailuo* in China
(Has not yet been made into a trumpet)
(Montagu 2018: 87)
Available at http://www.gastropods.com/7/Shell_3277.shtml

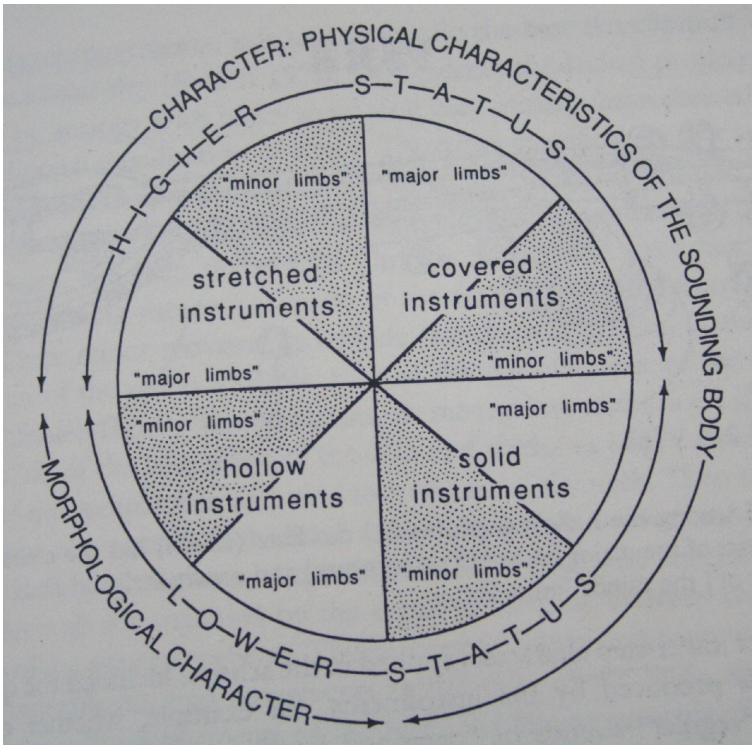
(Fig. 6) Choronia Triton Conchshell
Preferred Gastropod specie used as conchshell trumpet in Indonesia
(Has not yet been made into a trumpet)
My personal collection.



(Fig. 7) The association of the Chinese four-category scheme with the directions and the seasons (based on Needham and Robinson 1962: 153-55) in (Kartomi 1990: 38).

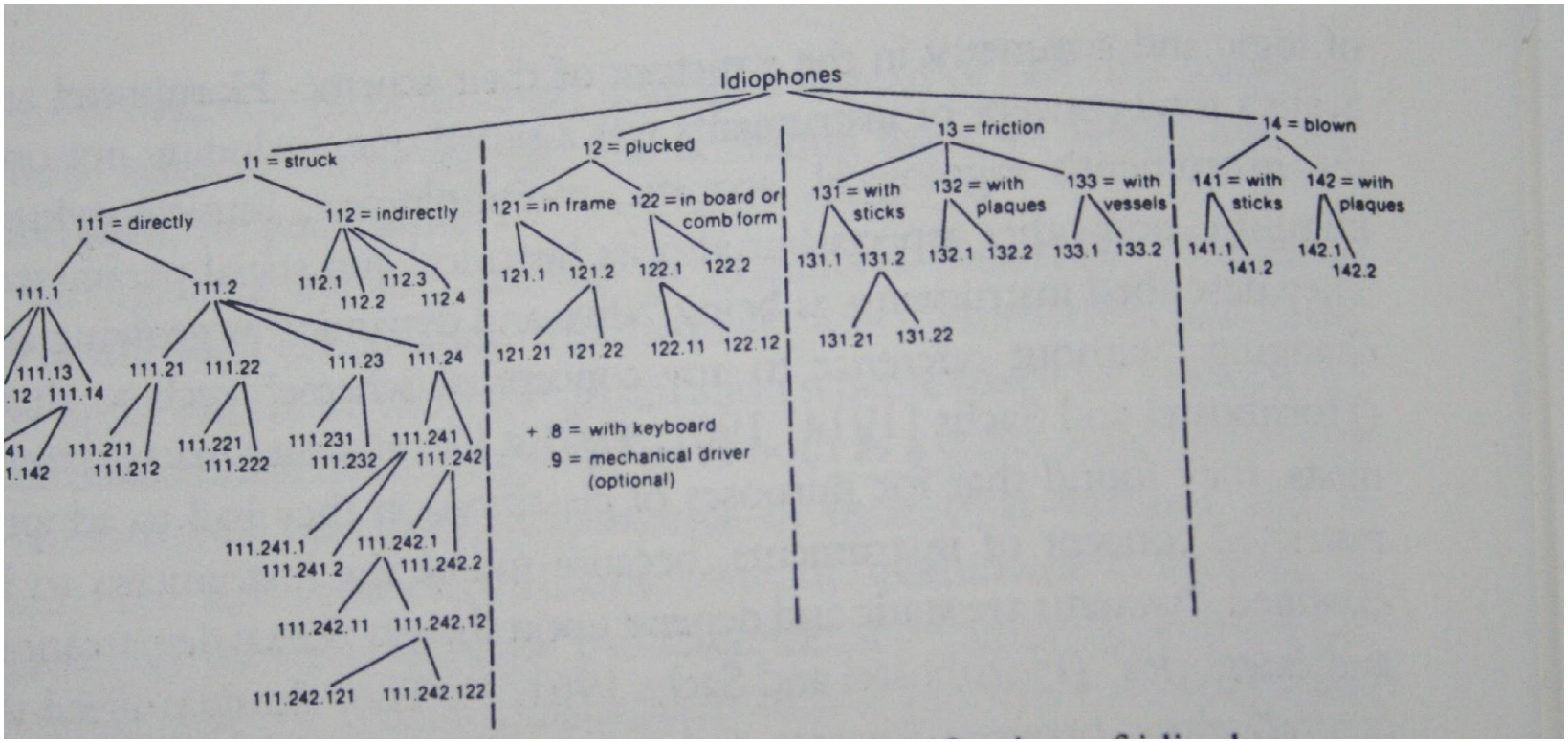


(Fig. 8) The association of materials and the *pa yin* with the directions and seasons (based on Needham and Robinson 1962: 153-55) in (Kartomi 1990:39)



(Fig. 9) The four-category Hindu-Indian classification of instruments according to characters of division and status of instruments (based on Natyasastra [Ghosh 1961]) in (Kartomi 1990: 59)

(Fig. 10) Structure of Mahillion's classification (based on Mahillion 1893: 503-5) in (Kartomi 1990: 164-5).


Idiophones
11 = struck
12 = plucked
13 = friction
14 = blown
111 = directly
112 = indirectly
121 = in frame
122 = in board or comb form
131 = with sticks
132 = with plaques
133 = with vessels
141 = with sticks
142 = with plaques
111.1
111.2
112.1
112.2
112.3
112.4
121.1
121.2
122.1
122.2
131.1
131.2
132.1
132.2
133.1
133.2
141.1
141.2
142.1
142.2
111.13
.12
111.14
111.21
111.22
111.23
111.24
121.21
121.22
122.11
122.12
131.21
131.22
41
1.142
111.211
111.212
111.221
111.222
111.231
111.232
111.241
111.242
+ .8 = with keyboard
.9 = mechanical driver (optional)
111.241.1
111.241.2
111.242.1
111.242.2
111.242.11
111.242.12
111.242.121
111.242.122