# The Abode of Water: Shipwreck Evidence and the Maritime Circulation of Medicine Between Iran and China in the 9th Through 14th Centuries

by

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#### **DEDICATION**

"...for by reason we have comprehended the manufacture and use of ships, so that we have reached unto distant lands divided from us by the seas; by it we have achieved medicine with its many uses to the body."

- al-Rāzī, *The Spiritual Physick of Rhazes*, Of the Excellence and Praise of Reason

"Whoever has emerged victorious participates to this day in the triumphal procession in which the present rulers step over those who are lying prostrate. According to traditional practice, the spoils are carried along in the procession. They are called cultural treasures, and a historical materialist views them with cautious detachment. For without exception the cultural treasures he surveys have an origin which he cannot contemplate without horror. They owe their existence not only to the efforts of the great minds and talents who have created them, but also to the anonymous toil of their contemporaries."

-Walter Benjamin, On the Concept of History

For my family.

For Khwāja 'Alā' al-Dīn al-Iṣfahānī, whose gravestone in China gave the title to this work.

And for all those who set out on journeys in hope or despair, may they find what they seek.

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"There is a secret agreement between past generations and the present one.

Our coming was expected on earth. Like every generation that preceded us, we have been endowed with... a power to which the past has a claim.

That claim cannot be settled cheaply..."

Thank you, Beth, for being my first anthropology teacher. Thank you to Sandra and Michele and Vinod and Ranjana and Terah, and to the many friends who accompanied me on this adventure.

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# TABLE OF CONTENTS

DEDICATION	i
ACKNOWLEDGEMENTS	iii
LIST OF FIGURES	vii
LIST OF APPENDICES	ix
ABSTRACT	X
PREFACE: Ghost Ships	xi
CHAPTER	
I. The Intellectual (After)lives of Things: Shipwreck Artifacts and Modern Museums	1
II. The Phoenix's Body: Community, Collecting, and Resilience in Coastal China	44
III. At Sea: Risk, Illumination, and Initiation on the Waters	82
IV. Shipwreck Medicine: Analysis of Recovered Drugs and Medical Cargoes	123
V. What Circulates: Knowledge and Blame in Fourteenth-Century China and Iran	148
Conclusion	198

Appendix I	203
Appendix II	209
Bibliography	231

# LIST OF FIGURES

Figure 1: Changsha bowl from the Belitung Wreck, courtesy of the Asian Civilizations Museum.	203
Figure 2: Changsha bowl from the Belitung Wreck, courtesy of the Asian Civilizations Museum.	203
Figure 3: Changsha bowl from the Belitung Wreck, courtesy of the Asian Civilizations Museum.	203
Figure 4: Changsha bowl from the Belitung Wreck, courtesy of the Asian Civilizations Museum.	204
Figure 5: Changsha bowl from the Belitung Wreck, courtesy of the Asian Civilizations Museum.	204
Figure 6: Water jar excavated from Yangzhou grave, shows the back and front sides. Eighth or nin century. From <i>Changsha yao</i> , Beijing: Zijincheng Chubanshe, 1996, Plate 87.	203 th
Figure 7: Broken tenth- or eleventh- century bowl with design. From <i>Changsha yao</i> , Beijing: Zijing Chubanshe, 1996, Plate 170.	204 cheng
Figure 8: Changsha bowl depicting scene of shipwreck, from <i>Shipwrecked: Tang Treasures and Me Winds</i> . Regina Krahl, John Guy, J. Keith Wilson, and Julian Raby, eds. (Washington, DC Smithsonian Books, 2010), 22.	
Figure 9: Storage jars from the Belitung shipwreck, courtesy of the Asian Civilizations Museum. Anatomical image from the <i>Tansūqnāma</i> .	205
Figure 10: Ilkhanid <i>albarello</i> shards, courtesy University of Michigan Museum of Art.	206

Figure 11: Anatomical image from the <i>Tansūqnāma</i> .	206
Figure 12: Anatomical image from the <i>Tansūqnāma</i> .	207
Figure 13: Taiji diagram from the Tansūqnāma.	207
Figure 14: Ḥū tū shú diagram from the Tansūqnāma.	208

# LIST OF APPENDICES

APPENDIX I: Figures	203
APPENDIX II: Selected Images and Textual Translation of the <i>Tansūqnāma</i>	209

#### **ABSTRACT**

This dissertation traces the role of Persian travelers and physicians in the maritime exchange of medical goods and knowledge between Iran and China between the ninth through the fourteenth centuries, and the afterlife of that exchange in modern museums. The Maritime Silk Road was a cosmopolitan network of premodern trade arteries linking the Far East and Southeast Asia to the Middle East by sea. The long-standing cultural and economic exchange across these thoroughfares dramatically expanded the pharmaceutical ingredients and medicinal recipes available to physicians practicing across the littorals of the Indian Ocean and South China Sea and facilitated the intellectual engagement of scholars with medical theories from afar. Drawing from an archive of shipwreck artifacts that includes medical goods, herbs, trade wares, and the personal effects of seafarers interpreted alongside written accounts of sea travel, medical and philosophical texts, tomb inscriptions, and architecture in port cities, this dissertation explores how the maritime journey of Persian travelers to China influenced the epistemology and practice of Persian medicine.

The first chapter addresses the current state of Southeast Asian shipwreck archaeology and traces the trajectories of medical, scientific, and related shipwreck and navigational artifacts within Western museum collections. Chapter two introduces the historical context in which Persian merchants moved in Middle Period China and initiates a discussion of hybridity and resilience. The burning and reconstruction of the Hangzhou Phoenix mosque provides the narrative frame in

which repeated outbreaks of violence in Tang and Song port cities are discussed as an analog to theories of the body and disease. Migration, hybridization, and medical collecting are examined as social and medical practices of resilience. The chapter uses archaeological evidence from port cities and the Belitung shipwreck with a narrative account of the massacre of foreign merchants in Guangzhou to situate the early maritime migration of Persian merchants to China within the changing tides of the Tang and Song periods. The third chapter analyzes the maritime trade routes as sites of spiritual and physical risk, humoral vulnerability, and initiation by examining Zoroastrian, Buddhist, and Islamic cosmologies of water and migration evident in religious rituals, medical instructions for seafarers, and the personal effects and crew supplies recovered from the Belitung, Intan, Java Sea, and Pulau Buaya wrecks. These materials are interpreted in light of reflections on the maritime life by travelers who survived the journey to China, leaving behind a ninth-century artistic depiction of a shipwreck, a narrative account, and inscriptions on the tombstones of merchants. Chapter four analyzes the medicines and medical material culture recovered from the Beliting, Java Sea, Intan, Pulau Buaya, and Quanzhou wreck sites within the framework of Persian humoral medicine. The final chapter examines the *Tansūqnāma*, a fourteenth-century Persian translation of Chinese medical texts, in light of the *longue durée* of medical exchange between China and Iran and changes to social hierarchies throughout the Mongol Empire that drastically changed the position of Persian merchants in China.

## **Preface:** Ghost Ships

This work traces the experiences and role of Persian travelers and physicians in the premodern maritime exchange of medical materials and knowledge between Iran and China from the ninth through the fourteenth centuries, and the afterlife of that exchange in contemporary museums and scientific discourse. As an intellectual history of the sea, this periodization is meant to foreground the connections between the environmental, material, and cultural experiences of Persianate long-distance ocean trade within the context of major medical and scientific developments in the Persianate world and significant developments in maritime trade in Tang through Yuan Dynasty China. Drawing from an archive of shipwrecks recovered from Southeast Asia and Southern China that includes circulated medical goods, human remains, ceramics, trade wares, and personal effects of sailors interpreted alongside accounts of sea travel, medical and philosophical texts, and surviving graves, tombs, and architecture at port cities, this dissertation explores how the maritime journey of Persian travelers to China influenced the culture of medicine in the medieval period.

On the seafloor between Sumatra and Java in 1997, hundreds of blue and green glass eye amulet beads stared upward from the remains of the Intan shipwreck, blinking after a millenium spent underwater.<sup>1</sup> Recovered alongside thousands of broken Chinese ceramics, tin and bronze ingots, thickly blue-glazed shards of Middle Eastern jars and other commercial goods, the tenth-century *cheshm nazar* beads were traded and worn then, as they are today, as talismans against

<sup>1</sup> Michael Flecker, "Treasure from the Java Sea," *Heritage Asia* 2, no.2 (2004):10.

misfortune.<sup>2</sup> Manufactured in the Middle East or re-worked from Middle Eastern glass in Southeast Asia,<sup>3 4</sup> the protection they offered was meant to be both general and specific: a broad invocation to the watchful eye of God and a defensive counter-gaze against maladies worked by the evil eye of others.<sup>5</sup> Then, as now, suffering could strike a victim from any direction, in a myriad forms, and from multiple causes.

The human bones, teeth, and DNA recovered from premodern shipwrecks in Southeast Asia and the Chinese coast bear witness to the suffering and terrifying risks faced by merchantsailors who traveled the monsoon circuit connecting the Persian Gulf with the Java and South China Seas in the Middle Ages.<sup>67</sup> Medical manuals instructed travelers by sea of the unique risks of ocean voyages and advised them on techniques they might use to protect themselves. Voyagers carried water and soil from their hometowns or holy sites as talismans against shipwreck and remedies against the dangers of impure, foreign waters.<sup>89</sup> But the long-distance journey from Basra, Siraf, and Hormuz along the Indian Ocean littoral and onward to ports in Southeast Asia and China brought such abundant opportunities to seafarers that, despite the risks, the maritime routes latticing the ocean basin were bustling by the medieval period. According to

<sup>&</sup>lt;sup>2</sup> Jonathan Mark Kenoyer, "Eye Beads from the Indus Tradition: Technology, Style, and Chronology," *Journal of Asian Civilizations* 36, no. 2 (2013): 16-17.

<sup>&</sup>lt;sup>3</sup> Michael Flecker, "The Archaeological Excavation of the 10th Century *Intan Shipwreck*," (Oxford: Archaeopress, 2002):78-79.

<sup>&</sup>lt;sup>4</sup> Sumarah Adhayatman, "Indonesian Beads," In *Magical Ancient Beads: From the Collection of Ulrich J. Beck*, Jamey D. Allen, ed. (Singapore: I.B. Tauris, 1998): 87.

<sup>&</sup>lt;sup>5</sup> Sekandar Amanolahi, "Supernaturalism among the Pastoral Societies of Iran," *Iran and the Caucasus* 11, no. 1 (2007):53.

<sup>&</sup>lt;sup>6</sup> Michael Flecker, "The Archaeological Excavation of the 10th Century *Intan Shipwreck*," (Oxford: Archaeopress, 2002):93-94.

<sup>&</sup>lt;sup>7</sup> Yamei, editor, "Foreign Sailors May Have Worked on South Song Dynasty Ships: Chinese Researchers," Xinhua Net, April 18 (2018). Accessed online, September 18, 2018: <a href="http://www.xinhuanet.com/english/2018-04/28/c\_137143898.htm">http://www.xinhuanet.com/english/2018-04/28/c\_137143898.htm</a>

<sup>&</sup>lt;sup>8</sup> Ralph Kautz, "A Kazaruni Network?," In *Aspects of the Maritime Silk Road: From the Persian Gulf to the East China Sea*. Ralph Kautz, ed. (Wiesbaden: Harrassowitz Verlag, 2010):68.

<sup>&</sup>lt;sup>9</sup> Ibn Sina, "The Canon of Medicine," Laleh Bakhtiar, adapt. (Chicago: Kazi Publications, 1999):453-454.

numismatic evidence, Persian merchants reached the southern coast of China as early as the fourth century CE, carving out a dominant place as maritime middlemen between China and the Near East before the advent of Islam.<sup>10</sup> By the fourteenth century, Persian had become the *lingua franca* of maritime trade in the Southern Ocean.<sup>11</sup>

The timeline evidenced by the archaeological record and Chinese historical sources disrupts both traditional Western narratives about seafaring and globalization and more current scholarship on the Indian Ocean World that focuses on the western half of the ocean, and privileges a later timeline. Scholarship that frames the beginning of robust long-distance trade in the Indian Ocean after the advent of Islam or the beginning of European sea trade and imperialism erases the deep roots of this trade in antiquity. This dissertation pushes the timeline backwards to consider the people and products moving on the sea routes between the Middle East and the Java and South China Seas centuries before our conventional historiographical set point in the Early Modern period by centering material evidence recovered from premodern shipwrecks.

Material artifacts reveal a fundamentally different world than discursive histories, which are deeply embedded in political power even when historians do our best to equalize imbalances in our source materials. The difference between textual and material sources is rooted in the difference between what people say and what people do- excavated garbage pits and illuminated manuscripts tell very different stories about human behavior. An overreliance on textual sources outside of an analysis of the material circumstances of their production has painted a false

<sup>&</sup>lt;sup>10</sup> Touraj Daryaee, "The Persian Gulf Trade in Late Antiquity," *Journal of World History* 14, no. 1(2003):3-4, 8, 12-13

<sup>&</sup>lt;sup>11</sup> Liu Yingsheng, "A Lingua Franca Along the Silk Road: Persian Language in China Between the 14th and 16th Centuries," In *Aspects of the Maritime Silk Road: From the Persian Gulf to the East China Sea*, Ralph Kautz, ed. (Wiesbaden: Harrassowitz Verlag, 2010):87.

picture of the premodern world, which material artifacts reveal to have been deeply interconnected. Objects recovered from premodern sea routes and shipwrecks are especially useful in understanding the nature of premodern connectivities and globalizations. Shipwreck evidence disrupts our inherited, discursive ways of seeing the world.

Carrying medicines, herbs, and trade wares for foreign markets in the East and returning to the Persian Gulf with spices, medicines, ceramics, and other goods acquired in Southeast Asia and China, the sailors who traveled the so-called Maritime Silk Road between the ninth and fourteenth centuries played a unique role not only in developing globalized aesthetics and commercial tastes, but in facilitating contact between physicians practicing across the Indian Ocean World. This element of the "spice trade" enabled the intellectual engagement of scholars with remedies, medical theories, and texts from afar. The long-standing cultural and economic exchange across these thoroughfares dramatically expanded the pharmaceutical ingredients and medicinal recipes available at ports in Asia, Africa, and the Middle East, and brought diverse philosophical, religious, and scientific ideas and practices into increasingly robust, direct contact. The spread and proliferation of non-native plants and cultivation technologies "from east to west" across the entire expanse of the Islamicate world in the medieval period has been described as a botanical and agricultural revolution by thinkers following the tradition of Watson.<sup>12</sup>

The Persianate maritime trade of medicinal plants from China and Southeast Asia, rooted in engagement with the trade routes to the east since antiquity, facilitated the encyclopedic

<sup>&</sup>lt;sup>12</sup> Andrew Watson, "The Arab Agricultural Revolution and Its Diffusion, 700–1100," *Journal of Economic History* 34 (1974): 8.

Michael Dexter, "Plants and Progress: Rethinking the Islamic Agricultural Revolution," *Journal of World History* 20, no.2 (2009):187.

description of the healing potential of each ingredient in Islamicate pharmacological literature across the region. The growing body of cosmographic encyclopedias that documented the natural phenomena of waterways, far away lands, animals, and plants witnessed by long-distance travelers detailed medical ingredients not only as practical tools for the treatment of illness, but as esoteric signs of God. In the thirteenth century, Zakarīyā ibn Muhammad Qazwīnī authored a cosmographic encyclopedia of the wonders of the created world, the 'Ajā'ib al-makhlūqāt wa gharā'ib al-mawjūdāt, Wonders of Creation and Oddities of Existence, that became widely copied and sat alongside a growing literature of Islamic environmental exploration. Qazwīnī, and those he inspired, catalogued and organized the phenomena of creation through the lens of 'ajab, wonder, which he defines as "the sense of bewilderment a person feels because of his inability to understand the cause of a thing." <sup>13</sup> The Eastern Indian Ocean regions of Southeast Asia and Southern China held a place of privilege in this literature as sites of wonder and awe. As sources of exotic and useful medicines, commodities, and novel medical techniques and theories, this geographical zone represented the earthly outer limit of knowledge. Persian merchant-sailors making their way to the Java and South China Seas were on the front lines of an epistemic project to characterize the natural and mystical histories of the edge of the world they encountered on the trade routes.

Premodern Persianate sea trade to the East was a material and intellectual endeavor.

Describing the incorporation of novel medical ingredients from China and Southeast Asia into Islamicate pharmacological texts, historian Anya King elucidates the cosmological qualities of potential remedies. She writes:

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<sup>&</sup>lt;sup>13</sup> Oazwini 1280:2b trans. Berlekamp 2011:23

"all substances to be introduced into or around the human body were evaluated for their medicinal properties. This included not only what we would understand as drugs, but also food and beverages, and even cosmetics and perfumes. The goal of therapy was to maintain a proper equilibrium between the bodily humors; thus, substances were assessed according to abstract qualities of heating or cooling, or moistening or drying. Depending on the patient's physical condition, a physician would recommend a diet to balance out these humors. If, for example, a patient was suffering from an ailment that was believed to have its roots in the humor of phlegm, which was cold and moist, a regimen of heating and drying foods, aromatics, and drugs would be prescribed." 14

Thus, every new medicinal plant or substance had to be categorized and catalogued for its humoral qualities, and read for its concealed signs of the Creator. Both hermeneutical approaches presented potential avenues of physical and spiritual healing. The profound heat and humidity of Southeast Asia, Guangdong, and Fujian shaped conceptualizations of the effects of remedies within this system, in ways that would significantly impact the development of Persian pharmacology.

I argue that the collection and exchange of foreign luxuries, medical goods, and knowledge through the sea trade was rooted not only in economic interests but in philosophical and spiritual conceptions of the body and understandings of the rational faculties of the mind that conceived of knowledge acquisition and healing as practices of collecting. The curiosity

King 2015:501

xvii

<sup>&</sup>lt;sup>14</sup> King 2015:501

cabinets of the Early Modern period were preceded by the premodern cargoes of ships and consumer's bodies as primary sites of collecting.

The material and intellectual exploration of China and Southeast Asia by Persian travelers and scholars after the seventh and eighth centuries occurred within the broader context of the Islamicate translation movement. The long and arduous journey undertaken to the East came to embody the quest for the outer limits of knowledge in the writings of such thinkers as 'Aṭṭār, Ibn Sīnā, and Ibn Ṭufayl, whose work would later be the basis of *Robinson Crusoe*. <sup>15</sup> Yücesoy writes:

"One of the most enduring achievements of the Abbasid caliphate (750–1258) was the support of the translations of most of the major works of ancient Greek, Persian, and Indian philosophies and sciences into Arabic from the eighth through the tenth centuries. The translation movement, as it was named in the twentieth century, breathed a new life into much of the intellectual legacy of the ancient world and opened new doors for crosscultural scholarly engagement among a large cast of intellectuals, administrators, and rulers over many generations. It inspired the intellectual life of Muslim societies until modern times and affected the scientific and scholastic growth of the Latin West for centuries." <sup>16</sup>

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<sup>&</sup>lt;sup>15</sup> See Baroud, Mahmoud. *The Shipwrecked Sailor in Arabic and Western Literature: Ibn Tufayl and His Influence on European Writers*. New York: I.B. Taurus & Co., 2012.

Ben-Zaken, Avner. *Reading Hayy Ibn Yaqzan: A Cross-Cultural History of Autodidacticism*. Baltimore: Johns Hopkins University Press, 2011.

<sup>&</sup>lt;sup>16</sup> Yücesov 2009:523

The medical trade between the Persian Gulf and China would extend this translation movement further across the globe. Persian physician, scholar, and politician, Rashīd al-Dīn Hamadānī, explicitly evokes the Abbasid translation movement in the introduction to his fourteenth-century-Ilkhanid translation of Chinese medical texts on circulation and pulse diagnosis. He positions himself as the new, eastward-gazing Hārūn al-Rashīd, and his scriptorium and religious and educational center in Iran, the *Rab-e Rashidi* at the Ilkhanid capital of Tabriz, as the new Baghdad, with its own House of Wisdom. 18

The Maritime Silk Road, which would later come to be known and appropriated as the "spice routes" in the coinage of European Age of Discovery discourse, functioned in the premodern era, long before the arrival of the Portuguese or Dutch, as a cosmopolitan network of trade arteries that scholars like Vink and Green have described as a "Muslim Lake" or "Muslim ecumene." Chinese and Southeast Asian botanicals had broad circulation in the Near East before the advent of Islam, in the words of King, due to "the critical role the cosmopolitan culture of the Sasanian empire (224-651)" played over "centuries of pre-Islamic Persian experience in the Indian Ocean and Central Asia". Abu-Lughod also depicts the *longue durée* of the Persian Gulf trade routes as critical in pre-Islamic times, becoming "increasingly hegemonic during the early centuries of Islamic expansion". Chaudhuri writes that "the main direction of trans-continental trade in the Indian Ocean during the eighth and ninth centuries

<sup>&</sup>lt;sup>17</sup> Hamadani 1313:7

<sup>&</sup>lt;sup>18</sup> Hamadani 1313:7: Klein-Franke and Zhu 1996:399

<sup>&</sup>lt;sup>19</sup> Antoinette Burton, Madhavi Kale, Isabel Hofmeyr, Clare Anderson, Christopher J. Lee, and Nile Green, "Sea Tracks and Trails: Indian Ocean Worlds as Method." History Compass 11, no. 7 (2013): 499.

Markus P.M. Vink, "Indian Ocean Studies and the new thalassology." Journal of Global History 2, no. 1 (2007): 55.

<sup>&</sup>lt;sup>20</sup> Anya King, "The New Materia Medica of the Islamic Tradition: The Pre-Islamic Context," *Journal of the American Oriental Society* 135, no. 3(2015):500.

Michael Dexter, "Plants and Progress: Rethinking the Islamic Agricultural Revolution," *Journal of World History* 20, no.2 (2009): 187-206.

<sup>&</sup>lt;sup>21</sup> Janet Abu-Lughod, Before European Hegemony. Oxford: Oxford University Press, 1989:146.

appears to have been through neither Hijaz nor the Red Sea itself but through the Persian Gulf."<sup>22</sup> He asserts that Persian sailors played a critical role in linking the Eastern Indian Ocean with the Western shores, making the markets in Iraq and Persia the motivating forces for transregional trade.<sup>23</sup>

The ships that carried nutmeg, pepper, cinnamon, frankincense, Islam, and an array of theories, technologies and practices that have come to define the modern world in the intervening centuries were piloted by human beings who have largely been forgotten. The historiography of the Indian Ocean World has largely focused on European sea power or the role of Islam in the western Indian Ocean, highlighting the importance of more recent Arab influence in the region. However, an examination of the premodern material history of maritime trade in the Eastern Indian Ocean into the Java and South China Seas reveals an earlier and substantive Persianate influence, with critical implications for the spread of Islam and Persianate literary, scientific, and medical culture in Southeast Asia and China. Yet this history remains largely unwritten. The archaeological record of long-distance maritime trade between Iran and Southeast Asia and China presents the opportunity for a significant intervention in the gaps of historiography that omit or obscure Persianate agency in the region. Said writes that Orientalist discourses about history, knowledge, and power destroy the identity of the non-Western actor, "obliterating him as a human being". This dissertation looks to the physical and textual evidence Persianate

<sup>&</sup>lt;sup>22</sup> K.N. Chaudhuri. Trade and Civilization in the Indian Ocean. Cambridge: Cambridge University Press, 1985, 46.

<sup>&</sup>lt;sup>23</sup> K.N. Chaudhuri. Trade and Civilization in the Indian Ocean. Cambridge: Cambridge University Press, 1985, 47.

<sup>&</sup>lt;sup>24</sup> See Janet Abu-Lughod, Edward Alpers, Kirti Chauduri, Michael Pearson, Abdul Sheriff, Eric Tagliocozzo, Engseng Ho, etc

<sup>&</sup>lt;sup>25</sup> King 2015:499.

<sup>&</sup>lt;sup>26</sup> Said 1979:27

navigators left behind, including remnants of their direct experiences and observations of the world they left behind at the bottom of the sea.

An additional layer of invisibility rooted in the tension between the intellectual history of these voyages and what mastery of the seas has come to mean mythologically to the modern, Western world complicates the telling of this story. The intellectual history of the "spice routes" is particularly slippery because of the ideological place assigned to them in allegories of early modern Europe's "Age of Discovery" and domination. Connery writes that "the Western discourse of sea power was central to the West's self-definition in the age of world conquest. The ocean...has long functioned as Western capitalism's primary mythic element". The mythology surrounding European maritime navigation has not only been deployed as the origin story for the Americas, but for "the rise of modern science," globalization, and modernity, itself. This domination has rendered the Indian Ocean "forgotten" in modern discourse, buried beneath centuries of imperial and colonial apologetics. But the historical contributions made by Muslim scholars along these trade routes directly impacted the foundations of modern science, biomedicine, and math.

The physical evidence of Muslim navigation of the Indian Ocean is scattered across its littoral and tucked away in museum collections and archives across the globe. From time to time it also reemerges from a watery grave in the form of excavated shipwrecks. A shipwreck is a site of tragedy, but also, always, a chapter in a larger story about science, technology, connectivity and commerce. A shipwreck is a ruin, and borrowing Vergès terminology, an archive, but one

<sup>&</sup>lt;sup>27</sup> Connery 2010:685-686

<sup>&</sup>lt;sup>28</sup> Connery 2010:685-686

<sup>&</sup>lt;sup>29</sup> Lehr in Vick 2007:42

that requires intense hermeneutic labour to simply locate.<sup>30</sup> Unlike an archive, a shipwreck's contents are not curated for any particular vision of posterity, but rather represent a snapshot of lives lived in transit. A shipwreck is a mobile ruin. Walter Benjamin has written that ruins and allegory are cut from the same cloth, that "allegories are, in the realm of thought, what ruins are, in the realm of things."<sup>31</sup> To literary theorists shipwrecks have been described as parables, as a romantic subgenre and the "standard means of transportation" for heroes.<sup>32</sup> In the Western mythic imagination, heroic European navigators crossed the seas and gave birth to the Modern world, with Europe and its colonial tethers floating across the Atlantic on center-stage. The poetic pull of shipwreck mythology has been taken up even by scholars who hope to disrupt the Eurocentric periodizations associated with ocean navigation, but this analysis has failed to decenter Europe from the global history of the seas.<sup>33</sup> In this dissertation, I argue that a shipwreck is not a poem, it is a place. A shipwreck, in the past, was an event that occured within a globalized flow of commerce. But in the intervening centuries, a shipwreck shifts to become a material assemblage and a physical testimony to long-distance trade on the seafloor. Each shipwreck tells very specific stories about the past that can only be uncovered through careful and ethical scientific and historical analysis. Physical ruins and poetic metaphors part ways in the archaeological record, and I methodologically foreground and privilege shipwreck material culture to decouple the stuff of seatrade from the Eurocentric ideologies that have come to surround it. Stead writes that a ruin is a "process, a means of demythifying and stripping away a

<sup>&</sup>lt;sup>30</sup> Vergès 2003:246

<sup>&</sup>lt;sup>31</sup> Benjamin 1977:177

<sup>&</sup>lt;sup>32</sup> Northrup Frye in Steve Mentz, *Shipwreck Modernity: Ecologies of Globalization: 1550-1719*. Minneapolis: University of Minnesota Press, 2015: xxiv.

<sup>&</sup>lt;sup>33</sup> Mentz 2015

falsely affirmative vision of reality, and of history,"<sup>34</sup> and the material remains of premodern wrecks do just that. To understand the difference between textual histories and the material sources made available through maritime archaeology, compare the discursive accounts of Columbus's voyage across the Atlantic to what you might learn from being able to look in his pockets and in the stowage of his ship. If a total mastery of the world's oceans has come to be a primary symbol of the West's scientific and political hegemony in the making of the Modern world, digging up the premodern bones of globalization in Muslim shipwrecks strips away that illusion.

Using shipwreck and port material culture, this study deploys anthropological and historical methods to examine the lived experiences, medical epistemologies and cultural practices associated with the circulation of medical goods and knowledge across the sea routes linking Iran to China. The dissertation chapters progress through a Braudelian-inspired structure of analysis that follows the cyclical chronotope of Indian Ocean monsoon travel. We begin in the present, with an analysis of shipwrecks in the current state of Southeast Asian maritime archaeology. The trajectories of shipwreck objects and artifacts of Islamic science and medicine are traced through their permutations in Western museums and the stakes of their display. The second chapter begins in a moment of crisis and resolution for the Muslim community of the port of Hangzhou in the Song-Yuan transition and looks back on the Persian merchant diaspora's deep roots and long struggle in the Tang Dynasty port cities of China. The third chapter examines the lived experience of maritime trade from the Persian Gulf, examining the vulnerability of travelers to illness, risk, and wreckage through the lens of recovered onboard medical kits, medical advice for sailors, and gravestone and mosque inscriptions at port, The

<sup>34</sup> Stead 2000:11

fourth chapter examines, in detail, the medical materials merchants moved on the ocean and the connections made between their transregional trade of drugs and high-fired ceramics through an analysis of the cargoes of multiple shipwrecks. The final chapter traces the fate of coastal Muslims in Yuan China and their connections to an Ilkhanid Persian translation of Chinese texts on pulse diagnosis. The port cities of Hangzhou (Khinsai), Yangzhou (Kantu), Guangzhou (Khanfu), and Quanzhou (Zaytun) anchor the progression of chapters, with additional attention being given to Changsha, in China, and Tabriz, in Iran as related sites of cultural production related to medical exchange.

The importance to the Modern world of the premodern maritime medical merchants from the Persian Gulf who transported drugs and "spices" throughout the sea routes connecting the Middle East with Africa, South and Southeast Asia and China is difficult to overstate. Though we are largely far-removed from the raw materials and origins of the medications we take today, the majority of prescription medications around the globe are still "derived from or patterned after" plants and other organic materials found in the natural environment, 35 with tropical species serving as an especially abundant "reservoir of medicines." Though less than 5% of tropical forest plants, according to Zakrezewski, have been chemically analyzed for their medicinal value, Indonesia, alone, whose waters sheltered the majority of shipwrecks discussed in this dissertation, is home to an estimated 1,000 identified medicinal plants recognized by the World Health Organization. The premodern ships that encountered and carried these

<sup>&</sup>lt;sup>35</sup> Eric Chivian and Aaron Bernstein 2008:12, How Our Health Depends on Biodiversity, Harvard Medical School Center for Health and the Global Environment

<sup>&</sup>lt;sup>36</sup> Ibrahim Jantan 2004:27 Jurnal Sains Kesihatan Malaysia 2(2) 2004: 27-46 Medicinal Plant Research in Malaysia: Scientific Interests and Advances

<sup>&</sup>lt;sup>37</sup> Zakrzewski, P.A. 2002. Bioprospecting or biopiracy? The pharmaceutical industry's use of indigenous medicinal plants as a source of potential drug candidates. University Toronto Med. J.79(3): 252-254.

<sup>&</sup>lt;sup>38</sup> Plant Resources of South-East Asia 55 Soepadmo, E., 1991.

remedies across the globe, making them the basis of not only the medieval world's, but of our own medicine cabinets, were not ghost ships, wandering the seas derelict and spreading pharmaceutical biodiversity by accident, without intention. They were purposeful, and their endeavors and epistemologies set the stage for contemporary global medicine. The period covered in this dissertation includes both eras of tranquility and historical moments of profound violence and distress against the Muslim community in China. Persianate medical merchants persisted throughout these events, adapting, and deploying strategies of community and personal resilience. The fourteenth century would witness dramatic change after centuries of maritime continuity, and the coming era would witness a reconfiguration of maritime power in the waters of Southeast Asia that had been central to Persianate long-distance sea trade.

Before port cities and trade networks were configured in the Early Modern period,

Persian merchants played an essential role in the spread, categorization, translation, and

popularization of Southeast Asian and Chinese medicines around the world. The material culture

of this trade has rippled through the societies of an increasingly globalized world in the centuries

that followed, informing not only medical prescriptions but aesthetic tastes and intellectual

traditions. This dissertation explores the archive of material evidence they left behind on the

seafloor and in port cities, in the hopes that their contributions will not be forgotten.

#### **CHAPTER I**

## The Intellectual (After)lives of Things: Shipwreck Artifacts and Modern Museums

This is a story about disruption. About what happens to the meanings of objects when their trajectories across land, water, and time rupture and bend back upon themselves in new contexts. In the opening essay of *The Social Life of Things: Commodities in Cultural Perspective*, Arjun Appadurai argues that "commodities, like persons, have social lives," and that their values and meanings are forged within lived political and human "interactions" of "desire and demand, reciprocal sacrifice and power."<sup>39</sup> To untangle the hidden social histories of objects of exchange, he enjoins anthropologists and historians to "follow the things themselves, for their meanings are inscribed in their forms, their uses, their trajectories."<sup>40</sup> But what happens when forms break and shatter, or old uses are forgotten? How can objects be read for meanings and values when historical trajectories shift radically or violently from one context to another?

The artifacts recovered from shipwrecks and port cities that are described in this dissertation tell the story of premodern globalizations that connected Africa, the Middle East, and Asia in a network of trade routes converging in Southeast Asian waters. The material culture, and physical evidence, of premodern Islamicate mobility is scattered across the vast expanse of these routes, and its afterlife has been dictated by a multitude of changing historical developments and tensions. Two of these developments, one playing out over centuries in Western institutions and the other, over only the past few decades, largely shape the fate of Islamicate artifacts in the

<sup>&</sup>lt;sup>39</sup> Arjun Appadurai The Social Llfe of Things: Commodities in Cultural Perspective. Cambridge: Cambridge University Press, 1986:3,4.

<sup>&</sup>lt;sup>40</sup> Appadurai 1986:5.

present and are the subject of this chapter. First, the current crisis in Southeast Asian maritime archaeology, where excavation resources, local conditions and needs, and global demands are often in conflict, obstructs the preservation of shipwreck material culture and paradoxically endangers heritage that multiple stakeholders and nongovernmental organizations have vowed to protect. Second, the taxonomic and narrative roles assigned to Islamicate artifacts from the trade routes by Western academic institutions and museums delimit where and how these objects are understood, collected, and displayed. Both of these obstacles share entanglement with the political stakes of maritime power and Western claims to "mastery of the seas" that have reverberated through the waters of the eastern Indian Ocean and Java Sea since the Portuguese, Dutch, Spanish, and British made their way to Southeast Asia. The Western world's modern selfimage came into being out of longing for the Strait of Malacca, 42 out of desire for what others had already achieved there. This chapter addresses the suppression of the material evidence of those achievements through practices that have endured in European and American institutions and in novel applications of orientalism by contemporary international organizations. By rendering the history of the "spice routes" through a lens that begins with early modern European navigation, rather than through the *longue durée* of premodern transasiatic and Islamic seafaring, one of the world's most interconnected and innovative intellectual spaces has been nearly erased from Western institutional memory.

Although many shipwreck artifacts are of enormous artistic value and beauty, in the pages that follow these objects will be analyzed for their contributions to the global history of medicine,

<sup>&</sup>lt;sup>41</sup> Christopher Connery. "Sea Power." *PMLA* 125, No. 3:685-692, 2010.

<sup>&</sup>lt;sup>42</sup> The intended destination of Columbus

navigation, and chemistry, not for their aesthetics. The reason for this focus is two-fold. Briefly addressed in the introduction of this dissertation, literary scholar Christopher Connery has argued that European-American mastery of the seas in the New World has come to symbolically represent the mythological beginning of "the rise of modern science." This chapter will argue that nationalistic and orientalist practices in Western museums have decontextualized Islamicate objects related to the history of global science and technology because of the ways they threaten that mythology. In many museum contexts, and in European and American political ideologies, Christopher Columbus' path across the Atlantic has become the spatial and temporal dividing line between past and present, modern and archaic, science and the savage. As European powers gained military and economic dominance of the Atlantic and Indian oceans, evidence of Islamicate science and oceanic navigation was appropriated into European histories or collected as booty, in service of new regimes. This has created an uncomfortable space for these objects in Western museums, where they often have trajectories in collections and exhibits that obscure, rather than clarify, their provenance and significance.

How might shipwreck artifacts and museum objects relate to the history of science? Appadurai identifies knowledge as an intrinsic part of the social life of commodities. Objects of exchange, "like persons," have intellectual lives. Appadurai breaks this down into "the knowledge that goes into the production of a commodity" and "the knowledge that goes into appropriately consuming the commodity." Museums act as brokers of meaning and knowledge about objects in contexts often wildly removed from original sites of production or use. Nonetheless,

<sup>&</sup>lt;sup>43</sup> Connery 2010:685-686.

<sup>&</sup>lt;sup>44</sup> Appadurai 1986:41.

epistemologies, worldviews, technologies, and schemas of the cosmos and the human body inhere within artifacts of medical and scientific practice, and often come to symbolize relationships between power and knowledge, either in the past or the present.

Islamicate societies from the eighth century to the early modern period<sup>45</sup> authored scientific advancements in an astonishing number of fields including mathematics, navigation, astronomy, botany, agriculture, medicine, pharmacy, chemistry, and multiple arenas of technology.<sup>46</sup> This activity produced a multitude of objects now housed in museum collections around the world. These objects are, however, often conspicuously absent or sidelined in American science museums, even in exhibits about the history of navigation and seafaring. Many artifacts of Islamic science are, in fact, scattered in collections and exhibits in art museums, where their scientific importance is hidden in plain sight, often left completely uninterpreted in service of a decorative "aesthetics of decontextualization."<sup>47</sup>

The diversity of Islamicate artifacts related to the history of science in American museums is enormous and includes objects typically not recognized for their value to science and technology. Beyond astronomical and navigational instruments, glass, ceramic, and metal wares reflect developments in technologies of production and were used in the practices of chemistry and pharmacology. Alembics, beakers, tubes, cups, bowls, and tools used in distillation and medicine are housed in art collections around the world. Well-preserved shipwreck ceramics and

<sup>&</sup>lt;sup>45</sup> Contributions like those made at the Maragha and Istanbul observatories make it clear that scientific innovation in the Islamicate world continued well after what is known as the Islamic "Golden Age." For further information, see Ihsano glu 2004 and Bektas and Sherman 2013.

<sup>&</sup>lt;sup>46</sup> Yakup Bektas and Roger Sherman "A Bold New Enterprise: The Istanbul Museum of Science and Technology in Islam." *Technology and Culture* 54(3):619, 2013.

<sup>&</sup>lt;sup>47</sup> Appadurai 1986:28.

glasswares contain chemical traces, or full, intact samples, of the organic materials and medicines stored inside. Shipwreck weights, measures, and commodities marked with multiple numeric systems reflect the cosmopolitan environment that gave rise to Arabic-Indic numbers. Paper, originating in China but introduced to the West through Islam, is perhaps the most important example of the material culture of science and is ubiquitous in art museums, where scientific and medical manuscripts are contextualized in exhibits for their artistic value.

According to Helena Robinson, the organization of artifacts into disciplinary categories for collection and display assigns and circumscribes "the interpretive possibilities of each collection item." An astrolabe in an art museum is typically exhibited for its beauty, not for its functional substance. The same is true of any scientific instrument that happens to also be of aesthetic value. Robinson asserts that "a glance back into the history of museums reveals their development was always founded in the need to organise knowledge and history," and early European collectors who were unaware of the scientific value of beautiful objects prized them as art objects or exotica. The grouping, or "deployment," in Robinson's words, of scientific objects from the Islamicate world within the "interpretive scaffolding" of art exhibits delimits what museum audiences recognize as scientific. If collecting is regarded as a signature practice of early modern European scientific inquiry, what impact does the knowing or unknowing collection of artifacts of non-European scientific inquiry have on European, and American, identity-production?

<sup>&</sup>lt;sup>48</sup> Helena Robinson. "Remembering Things Differently: Museums, Libraries, and Archives as as Memory Institutions and the Implications for Convergence." *Museum Management and Curatorship*, 27:4, 417, 2012.

<sup>&</sup>lt;sup>49</sup> Robinson 2012:421.

<sup>&</sup>lt;sup>50</sup> Robinson 2012:414,422.

To make sense of the invisibility of the material culture of Islamicate science in American museums, it is helpful to return to Appadurai's methodological centering of the "life histories" of objects of exchange, allowing "the things in motion" to "illuminate their human and social context[s]" and decode the "regimes of value" in which they are assigned meaning.<sup>51</sup> Appadurai writes that "the politics of value is in many contexts a politics of knowledge." Borrowing from Kopytoff, Appadurai gives special attention to the disruptions and diversions from particular paths of exchange and meaning-making for objects as moments of "creativity or crisis" where values and relationships change, sometimes abruptly.<sup>53</sup>

The life histories of people and of objects include periods of stability, conflict, and dramatic transformations of status, both positive and negative.<sup>54</sup> This dissertation traces multiple crises of instability in the premodern lives of Muslim merchants in Chinese and Southeast Asian ports, and this historiography of trade, setbacks, and acheivements is meant to fill in the lacuna left by subsequent European conquests and domination of the eastern trade routes. Appadurai writes that a:

... form of crisis in which commodities are diverted from their proper paths, of course, is warfare and the plunder that has historically accompanied it. In such plunder, and the spoils that it generates, we see the inverse of trade. The transfer of commodities in warfare always has a special symbolic intensity, exemplified in the tendency to frame more mundane plunder in the transfer of special arms, insignia, or body parts belonging to the enemy. In the high-toned plunder that sets the frame for more mundane pillage, we see the hostile analogue to the dual layering of the mundane and more personalized

<sup>&</sup>lt;sup>51</sup> Appadurai 1986:5,4.

<sup>&</sup>lt;sup>52</sup> Appadurai 1986:6.

<sup>&</sup>lt;sup>53</sup> Appadurai 1986:17,26.

<sup>&</sup>lt;sup>54</sup> Appadurai 1986: 26.

circuits of exchange in other contexts... Theft, condemned in most human societies, is the humblest form of diversion of commodities from preordained paths.<sup>55</sup>

Appadurai argues that "the major art and archaeology collections of the Western world" were formed through "extremely complex blends of plunder, sale, and inheritance, combined with the Western taste for the things of the past and of the other." This chapter begins with a discussion of the implications of this legacy on the current status of Southeast Asian shipwreck artifacts and continues with a broad consideration of the historical context of the Western acquisition of Islamic scientific objects and their itineraries in collections and exhibits, specifically within the Smithsonian, the network of national museums of the United States. What emerges from this analysis is a history of appropriation, examined here in its manifestations in regulatory structures and nation-building in American museums through excavation, collection, and exhibit practices that tell a very particular story about the nature of science, and about who and what can be considered its legitimate stakeholders, actors, or lay claim to its history as cultural heritage. This analysis begins with a summary of the current crisis in Southeast Asian waters.

## Shipwreck Fever

A methodological and ontological knot is currently entangling archaeologists, historians, curators, and local stakeholders concerned with the material culture of premodern maritime trade in Southeast Asia. Because of their strategic navigational position as a gateway between East and West, it has been speculated by maritime archaeologists like Michael Flecker that there may be

<sup>56</sup> Appadurai 1986:27.

<sup>&</sup>lt;sup>55</sup> Appadurai 1986:26.

more historically significant shipwrecks in Indonesian waters than anywhere else on earth.<sup>57</sup> The reef-rich straits<sup>58</sup> surrounding Sumatra and the Bangka and Belitung Islands are littered with the wrecks of local lashed-lug vessels and Middle Eastern ships from the first millennium of the Common Era, Chinese wrecks from the fourteenth century onward, as well as Portuguese, Dutch and English vessels sunk from the sixteenth through the twentieth centuries. These important ships, and their cargoes, possess the material history of multiple global networks of maritime navigation and technology, and contain untouched evidence of premodern globalizations and transregional trade, the earliest spread of Islam to Southeast Asia and China, as well as the bones of early modern European incursions in maritime Asia. Coins, prayer beads, medicines, porcelains, early Arabic-Indic numerals, tea, opium, metals, and DNA have all been recovered from these wrecks, often rewriting modern sensibilities and received wisdom about the past. But these wrecks are rapidly disappearing through escalating looting and illegal private sale. Valued as art, rather than evidence, shipwreck artifacts are sold and dispersed around the globe, and their sites of recovery often willfully destroyed. Because of the horrors of this loss, Western archaeologists and international policy makers have established anti-looting protocols meant to protect the wrecks.

But on the ground in Southeast Asia, or underwater in this case, these policies are often rejected as impractical, described as "perfectionistic" by archaeologists like Michael Flecker.<sup>59</sup> Though meant to protect underwater cultural heritage, the guidelines are sometimes perceived as

<sup>&</sup>lt;sup>57</sup> Michael Flecker. "The Ethics, Politics, and Realities of Maritime Archaeology in Southeast Asia." *International Journal of Nautical Archaeology*, 31(1):20, 2002.

<sup>&</sup>lt;sup>58</sup> Malacca Strait (between Malaysia and Sumatra), Sunda Strait (between Java and Sumatra), Bangka, Gaspar, and Karimata Straits

<sup>&</sup>lt;sup>59</sup>Flecker, 2002: 13.

impositions by former colonial powers that tie the hands of local researchers and recapitulate oppressive regimes of power. Policies meant to "protect" the wrecks for "future generations," have, in practice, been accused of facilitating the acquisition of shipwreck artifacts by the West. These policies, in Southeast Asia, have also facilitated, rather than deterred, the acquisition of shipwreck artifacts by illegal antiquities dealers and buyers who rely on local looters who cannot afford to obey the guidelines or wait for future generations to come to their aid.

To understand the current moment of this methodological bind, a snapshot of its recent history is required. In 1985, on the bottom of the sea, a British treasure hunter<sup>61</sup> destroyed an eighteenth-century Dutch East India Company ship in Indonesian waters that was previously loaded with tea, gold, and porcelain, and auctioned the cargo at Christie's in Amsterdam for over fifteen-million US dollars.<sup>62</sup> The looting and destruction of the 1752 wrecksite of the *Geldermalsen* infuriated governments in the region and international scholars alike. Their respective responses to this incident have shaped the parameters of the current crisis. Indonesia responded by creating a committee<sup>63</sup> to oversee the recovery of shipwrecks and initiated legislation that required any agent in its territorial waters who intended to recover objects from a wreck to first seek the government's permission, pay a deposit, officially register the excavation under a local agent, apply for necessary permits, obtain multiple licenses, follow international archaeological

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<sup>&</sup>lt;sup>60</sup> Michael Flecker. "Legislation on Underwater Cultural Heritage in Southeast Asia:Evolution and Outcomes." *Trends in Southeast Asia*, No, 23, Executive Summary. Singapore: ISEAS Yusof Ishak Institute, 2017.

<sup>&</sup>lt;sup>61</sup> Michael Hatcher

<sup>&</sup>lt;sup>62</sup> Flecker 2002:12.

<sup>&</sup>lt;sup>63</sup> Panitia Nasional Pengakatan dan Pemanfaatan Benda Berharga Asal Muatan Kapal yang Tenggelam (PaNas BMKT), passed by Presidential Decree No. 43 in 1989, "National Committee for Excavation and Utilization of Valuable Objects from Sunken Ships), see Flecker 2017:4.

standards,<sup>64</sup> and then give 50% of the wreck or of the profits from the wreck to the Indonesian government. Within this framework, commercial salvage companies who could afford the massive expense of underwater excavation began to partner with the Indonesian government and in the 1990's recovered shipwrecks at an unprecedented rate. Commercial salvage practice, however, is not compliant with international standards of archaeological recovery, and salvagers were left to self-police the new legislation's requirement that scientific standards be followed. From this period there are examples of shipwreck recoveries that employed maritime archaeologists who documented and preserved the evidence recovered from their sites, and examples of recoveries that did not. In 2001, UNESCO enacted its Convention on the Protection of Underwater Cultural Heritage condemning the participation of any commercial salvager in maritime recovery operations, with or without the inclusion of trained archaeologists and without consideration of whether or not there was local government oversight. Not a single Southeast Asian nation signed the convention. Eventually, in 2007, Cambodia, with its modest coastline, became the only signatory.<sup>65</sup>

Why the lack of support? First, according to Flecker, the convention calls for multiple requirements, rules, and operational guidelines for shipwreck recovery that are often logistically impossible in Southeast Asia. Second, other than in the case of Thailand, governmental funding for excavations has not been made available, and other than in the case of Singapore, may be completely out of reach.<sup>66</sup> Finally, the convention mandates that if its external rules cannot be met to the letter, rather than regional governments arranging their own public-private

<sup>&</sup>lt;sup>64</sup> Flecker 2017:4.

<sup>&</sup>lt;sup>65</sup> Flecker 2017: 26-27.

<sup>66</sup> Flecker 2017: 20, 29.

excavations, all discovered wrecks must be reported to its agents and left in place on the seafloor, 67 resulting in a complete cessation of all licit, licensed Indonesian excavations and to an escalation of illegal looting.<sup>68</sup> Additionally, UNESCO requires a bureaucratically complex system of reporting to Paris, which must occur in English or in French, the establishment in advance of any recovery of an unrealistic sourcing and outlay of funds by local excavators, and, importantly, the direction and staffing of any project by seemingly Western-trained maritime archaeologists, who are hard to come by in the region.<sup>69</sup> According to Flecker, in 2002, one year after the UNESCO convention was created, a mere two Indonesian individuals with training in maritime archaeology were documented working in the region.<sup>70</sup> If enough funds cannot be guaranteed (which they usually cannot) or Western-minted archaeologists cannot be found (which they usually cannot), the convention allows for partnerships with academic institutions and museums which have these resources, who, of course, directly benefit from such an arrangement. In practice, this situation mimics almost exactly the bad old days of European colonial control and archaeology in Southeast Asia and mirrors a very familiar appropriation of its resources for the benefit of outside powers. Although the convention does not technically shift the ownership of underwater cultural heritage from Southeast Asian actors to the elusive (and apparently English or French-speaking) "benefit of humanity" represented in its text, it absolutely shifts control of that heritage away from Southeast Asian stakeholders and guarantees

<sup>&</sup>lt;sup>67</sup> UNESCO. Records of the General Conference, 31st Session, Paris, 15 October to 3 November 2001, v.1: Resolution 24. Published 2002. <a href="https://unesdoc.unesco.org/ark:/48223/pf0000124687.page=56">https://unesdoc.unesco.org/ark:/48223/pf0000124687.page=56</a>
<sup>68</sup> Flecker 2017:30.

<sup>&</sup>lt;sup>69</sup> UNESCO. Operational Guidelines for the Convention on the Protection of Underwater Cultural Heritage, 9-12, 2015. <a href="https://unesdoc.unesco.org/ark:/48223/pf0000234177">https://unesdoc.unesco.org/ark:/48223/pf0000234177</a>; UNESCO. Rules Concerning Activities Directed at Underwater Cultural Heritage (Annex), 2001. <a href="http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/2001-convention/official-text/">http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/2001-convention/official-text/</a>; and Flecker 2002:20.

<sup>&</sup>lt;sup>70</sup> Flecker 2002:20.

<sup>&</sup>lt;sup>71</sup> UNESCO 2002.

access to that heritage by Western institutions. A poignant illustration of this troubled dynamic can be found in a response by UNESCO to common objections to its policies. UNESCO writes that if its requirements cannot be met, once shipwrecks "are found by national authorities..." (which they never are in Southeast Asia, they are nearly always found by local fishermen and sea cucumber divers)<sup>72</sup> "many measures, like sonar buoys, metal cages or sand bag coverings" could be put in place to protect objects from looting until future generations have the resources to comply with UNESCO.<sup>73</sup> So, the artifacts and evidence of premodern, non-Western, transregional globalizations and technological, scientific, and cultural achievements that in many ways defy Western metanarratives about the European origins of modernity should be, according to UNESCO, hidden under metal cages at the bottom of the ocean, until Western scientists can be paid to come get them. Out of over a dozen possible signatories in Southeast Asia, only one has joined UNESCO.<sup>74</sup>

At the heart of this conflict, and the methodological dilemma it poses, is how UNESCO frames the financial involvement of any non-academic partner in excavation. The UNESCO rules characterize any sale, trade, purchase, or barter of underwater cultural heritage that occurs outside the essentially Western academic economy of research and museum display as "commercial exploitation," or, in other words, looting. In 2010, Indonesia put a moratorium on licensing all commercial salvagers as partners to take time to update their laws given the

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<sup>75</sup> UNESCO 2002.

<sup>&</sup>lt;sup>72</sup> Flecker 2002:20; Flecker 2017:7.

<sup>&</sup>lt;sup>73</sup> UNESCO. "Refusal of Commercial Exploitation." Frequently Asked Questions. <a href="http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/frequently-asked-questions/">http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/frequently-asked-questions/</a>; UNESCO. Preservation. <a href="http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/protection/protection/preservation/">http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/protection/protection/preservation/</a>

<sup>&</sup>lt;sup>74</sup> Other factors complicate the picture, including UNESCO-required protocols for dispute resolution over wreck sites with multiple national stakeholders in disputed territorial waters.

developing situation, and according to Flecker, writing for Singapore's Institute for Southeast Asian Studies Yusof Ishak Institute in 2017, no academic publications on newly identified wrecks in Indonesian waters have been generated since 2012. New research on old wrecks faces the accusation of having been conducted unethically on contested objects that do not meet the guidelines of UNESCO, even when excavated by trained archaeologists, documented and conserved according to international standards, and working under a license with and for the Indonesian government. Licensed salvagers are no longer working in partnership with the Indonesian government or archaeologists, with Indonesia exerting control over its heritage, and local fishermen and divers who are often employed by Western agents have filled the gap by selling directly to antiquities dealers. Old school looting is back in business, with objects being dispersed beyond Indonesia's shores.

The political and ethical perils of conducting research in other sites, like historical archives, and with other sources, like colonial records, which are forged within systems of state and colonial power and financial exploitation are well-documented.<sup>78</sup> Putting the archive in its place is a well-recognized and necessary prerequisite to knowledge production for historians concerned about critical epistemologies and the decolonization of our disciplinary methods. But historians do not abstain from the archive, lock its doors, shut it behind a cage or refuse to produce research based on archival documents because of the ethical dimensions of how archives have been formed. We do not disallow our sources, rather, we contextualize them in hope of chipping

<sup>&</sup>lt;sup>76</sup> Flecker 2017:26.

<sup>&</sup>lt;sup>77</sup> Flecker 2017:7.

<sup>&</sup>lt;sup>78</sup> See Derrida, Foucault, Velody, Said, Richards, Steedman, White, and Stoler.

away at the systems of power that gave rise to the suffering of our research subjects. For historians who increasingly turn to material culture as primary sources for their research, museum collections share equally daunting ethical dangers. The trajectories of objects in museum collections have been analyzed for the ways in which they are embedded in colonial power structures and dispersed globally through acts of historical wrongdoing, through mechanisms Appadurai has characterized as "the opposite of trade." A grave danger of both museum collecting and archival acquisition is the decontextualization of the artifact or text from either its original environment or the field of power from which it emerged, and the consequences that its removal inflicts on its primary stakeholders. The interpretation of archived or collected materials is never a straightforward matter, and must always take into account the circumstances of its acquisition. Ranging from approaches that read the archives against or along the grain, postcolonial historians attempt to make use of the archive while grappling with the structures of power that birth and shape it. How can we do the same for underwater cultural heritage?

Is a shipwreck an archive? A ruin? A collection? Shipwreck fever suffered by anthropologists and historians working with underwater heritage produces a liminal discomfort, a location between fields and powers and institutions and ethical imperatives that must be contextualized to engage the ontological status of underwater sources. Looting is defined by archaeologist Colin Renfrew as "the illicit, unrecorded and unpublished excavation of ancient sites to provide antiquities for commercial profit." What, then, is the licit, licensed, recorded, and published

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<sup>&</sup>lt;sup>79</sup> Appadurai 1986:26.

<sup>&</sup>lt;sup>80</sup> Colin Renfrew. Loot, Legitimacy, and Ownership: The Ethical Crisis in Archaeology. 2000, 15.

excavation of shipwrecks by a sovereign power in its own waters in partnership with commercial salvagers? What is a set of rules that empower Western governments and institutions at the expense of Southeast Asian stakeholders? What and where are the forms of exploitation?

A shipwreck is an assemblage not curated for institutional memory or political motive, but for historical, cosmopolitan appetites. It is an ancient shopping cart frozen in time, a warehouse and a marketplace in motion. As a mobile menu offering the goods not available locally that consumers and merchants were willing to pay dearly for, in these cases with their lives, it occupies an ontological space uniting heterogeneous objects. Together, an elephant tusk, an Islamic ceramic water vessel, a Chinese bowl on which is painted a flower, and a storage jar of star anise all come together to tell a singular story with many hearts. A shipwreck, in many ways, functions as a frame story, with each storage compartment opening a scene onto a different narrative thread. Shipwrecks by definition defy boundaries and defy easy solutions. To abandon their stories to the sea hardly seems an ethical solution.

Shipwreck objects have been controversial additions to museum collections and exhibits in the West. The Smithsonian Institution infamously prepared an exhibit of the Belitung wreck that was scrapped at the last minute due to protests from the archaeology community. Scholars have spoken out both for and against display of the material, and subsequent exhibits of artifacts from the Belitung have been mounted at The Aga Khan Museum in Toronto and the Asia Society

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<sup>&</sup>lt;sup>81</sup> Shipwrecked; Kate Taylor NYT6/28/ 2011 "Shipwreck Show Postponed"; Kate Taylor NYT 3/10/2011 "Archaeologists Criticize Smithsonian Over Java Objects"; Kate Taylor NYT 4/24/2011 "Treasures Pose Ethics Issues for Smithsonian"; "Smithsonian Hosts Discussion on Issues Surrounding the Exhibition of the Belitung Cargo", *Shipwrecked: Tang Treasures and Monsoon Winds*(Press release), The Smithsonian Institution, 25 April 2011

of New York. As shipwreck artifacts from Southeast Asia negotiate a space in the museum world, they will join ranks with other objects from the trade routes that inhabit their own ethically dubious ground in Western institutions. The remainder of this chapter considers the trajectories of Islamicate artifacts more generally in Western museums, beginning with those displayed in the Smithsonian, itself, in America's capital. In this setting, artifacts from the Islamicate world are dispersed across institutions where their decontextualization takes a particularly political form.

#### The Red Castle

In Washington, D.C.'s Smithsonian Museum complex, outside the iconic "Castle" building pictured on postcards and promotional materials across the capital city, there is a tiled fountain and small, lush garden built in homage to Andalusia's Alhambra palace fortress. The Fountain Garden, a section of the larger Enid A. Haupt Garden extending from the Smithsonian Castle to Independence Avenue, is situated just behind the National Museum of African Art, with a good view of the entrance to the Arthur M. Sackler Gallery and it's giant posters proclaiming the exhibits of Asian and Near Eastern art on view inside. Just beyond the Sackler on Independence Avenue sits the Freer Gallery, which recently reopened after a long renovation during which the infrastructure and galleries were rebuilt. These galleries and the garden, along with the garden's Asian-style pagoda entrance to the S. Dillon Ripley Center, make up the corners of what's known as the Smithsonian's quadrangle.

According to the Smithsonian Gardens website, the Haupt Garden "reflects the cultural influences celebrated in the adjacent architecture and [in] the museums below." Cultivated on the rooftops of the underground sections of the museums of Asian and African Art, the garden stands simultaneously on the shoulders of giants from faraway lands and within the shadow of American state power on the National Mall. Anchored by the red sandstone Smithsonian Castle and a large, central Victorian parterre, the Haupt Garden links together and reincorporates disparate worlds into an American narrative, visually establishing relationships of inclusion, harmony, and subjugation. The inclusion of the ode to the Alhambra in this design is visually pleasing and resonates thematically with the proximity to the surrounding galleries of international art. But from the standpoint of political history, the inclusion of a simulacrum of the most famous Islamic citadel in Europe within the "great garden on the Mall" merits further analysis. Sa

Haug has argued that, from ancient times, capital cities have functioned as "frame[s] of representation" for the state and/or the empires that they govern.<sup>84</sup> The material culture of foreign lands has long been an important element in this form of political theatre, with prestige objects from faraway locations serving as icons of long-distance trade relationships, symbols of genealogical connection or legitimation, or representations of political domination as spoils of war.<sup>85</sup> In the case of Augustan Rome, Haug writes that, "monuments which originated in a

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<sup>85</sup> Haug 2001:111-112.

<sup>&</sup>lt;sup>82</sup> Smithsonian Institution."*Enid A Haupt Garden*." Smithsonian Gardens Website. http://www.gardens.si.edu/our-gardens/haupt-garden.html.

<sup>&</sup>lt;sup>83</sup> Park, Edwards and Jean Paul Carlhian. A New View From the Castle. Washington, D.C.: Smithsonian Institution Press. 1987:10.

<sup>&</sup>lt;sup>84</sup> Haug, Annette 2001 "Constituting the Past - Forming the Present: The Role of Material Culture in the Augustan Period." Journal of the History of Collections 2,:115.

'foreign' ideological context had to be reinterpreted," a process she describes as "resemanticization." She writes:

'Re-semanticization' does not stand for a complete replacement of the original meaning of the monuments in these cases. This becomes apparent when the example of the mounted figure of Alexander the Great is considered, its head being replaced by Caesar with his own portrait.<sup>87</sup>

Beneath a skyline pierced by the Washington Monument, the Alhambra garden recreates a Qur'anic vision of paradise. The interpretive label in the garden reads:

The Fountain Garden is modeled after the Court of the Lions at the Alhambra, a 14th-century Moorish palace and fortress in Granada, Spain, now included on UNESCO's World Heritage List. (Moor is a general term for North African Muslims who conquered Spain in the 8th century.) The legendary Court features a *chahar bagh* – a Persian term meaning "four gardens" – pattern of four quadrants formed by water channels that meet at a central fountain. The Fountain Garden suggests a walled paradise, an important concept in early Persian and Islamic garden design. Water channels on top of the low walls around the central fountain represent the four rivers of paradise (water, wine, honey, milk), while the bubbling center jet symbolizes eternity. At the garden's north end, a "veil" of water cascades down a carved stone wall.

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<sup>&</sup>lt;sup>86</sup> Haug 2001:115.

<sup>&</sup>lt;sup>87</sup> Haug 2001:115.

In the case of the Fountain Garden, the re-semanticization of Islamic power and artistic grandeur in an American context takes a clear-cut form. The Alhambra-on-the-Mall is visually anchored and dominated by the red sandstone Smithsonian Castle, a 12th-century-Norman-styled palace fortress that has been the symbolic seat of American museum science and scholarship since it's construction in the nineteenth century. The original Alhambra, *al-Qal'at al-Ḥamrā*, literally translates from Arabic to mean, "the Red Fortress." The massive fortified city was a complex constructed from the 11th-15th centuries, ultimately containing seven palaces, twenty-three towers, a fortress, multiple mosques, and a host of other buildings and facilities. The Alhambra has remained an enduring symbol of not only Islamic political power and empire, but of the massive flowering of science, arts, and culture that took place under Muslim rule. The resemanticization of the Alhambra in the shadow of the Smithsonian Castle is, by way of Haug's example, the beheading of one red castle for another. This recontextualization of a partial memory of Islamic empire appropriates its associations with sovereignty, beauty, and knowledge while erasing its identity as a competing power.

The construction of the Smithsonian quadrangle and completion of the Haupt Garden was marked by the publication in 1987 of a book titled, *A New View From the Castle*. Former Secretary of the Smithsonian, Robert McCormick Adams, reflected on the timing of the completion of the grand project in the forward of the book, writing, "little wonder, then, as we approach a new century and consider marking the Quincentenary observance of Columbus's

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<sup>&</sup>lt;sup>88</sup> Smithsonian Archives. "Smithsonian Institution Building, The Castle." https://siarchives.si.edu/history/smithsonian-institution-building-castle.

<sup>&</sup>lt;sup>89</sup> Cardell-Fernández, Carolina and Carmen Navarette-Aguilera. "Pigment and Plasterwork Analyses of Nasrid Polychromed Lacework Stucco in the Alhambra (Granada, Spain)." *Studies in Conservation* 51(3):161, 2006.

<sup>&</sup>lt;sup>90</sup> Park and Carlhian 1987.

landing in the Americas, that the Smithsonian vision would seek a fitting expansion for activities and museum efforts that reflect its place in the world community." In this musing, Adams positions the expansion of the museum activities of the Smithsonian, and its "place in the world," in a direct genealogical line beginning with Columbus's arrival in the Americas and associates its efforts with the activities of discovery and conquest. A century earlier, this association with Columbus was written into the very architecture of the institution's first building devoted entirely to exhibits. Erected above the north-facing entrance was a commissioned sculpture titled, *Columbia Protecting Science and Industry*. <sup>92</sup> The sculpture depicts the figure of Columbia, the personification of the young United States in the form of a goddess, standing with a sword, protecting the seated figures of Science and Industry. Cavaioli writes:

At the time of the American Revolution, the name Columbia assumed wide popularity as its use demonstrated the successful beginning of nationhood and historical continuity...The use of the name ... emerged in the early years of the republic as the nation's leaders searched for an appropriate title that would signify a distinct nationality, quite separate from the rest of the world...Just as George Washington symbolized the national patriotic spirit, purely homebred, Christopher Columbus linked Europe to America... that spirit of nationalism was often sparked by the presentation of Columbia as the Goddess of Liberty during patriotic pageants.<sup>93</sup>

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<sup>&</sup>lt;sup>91</sup> Park and Carlhian 1987:8-9.

<sup>&</sup>lt;sup>92</sup> Smithsonian Archives. "Arts and Industries Building." https://siarchives.si.edu/history/arts-and-industries-building/.

<sup>93</sup> FJ Cavaioli. "Columbus and the Name Columbia." *Italian Americana* 11(1)1992:8-9.

At the conclusion of the *Reconquista* of Spain, the Alhambra was seized by the Catholic monarchs, Ferdinand II and Isabella I, and became a symbol of the extirpation of non-Catholics, its name forever associated with the decree expelling all remaining Jews from their domain.<sup>94</sup> It was Ferdinand and Isabella who, in 1492, sponsored Columbus's voyage in search of the Strait of Malacca to what would become the Americas, meeting with him at the *Alcázar de los Reyes Cristianos*, a fallen Islamic castle that, like the Alhambra, had been seized in Andalusia.

According to Connery, this voyage and the European mastery of the Atlantic it has come to symbolize represent the mythological genesis of modernity and science.<sup>95</sup> The great metaphor for the new age of scientific discovery was literally launched on the back of Iberian Islam's defeat, from within its fallen castle walls. Edward Said identifies the discourse emergent from this mythology as dependent on an orientalist "imaginative geography" that divides the world's cultures into East and West, with science clearly the property of the latter.<sup>96</sup> Bektas and Sherman write that:

"science and technology thus became fields in which to determine the line between civilized and primitive, cultured and barbarous, developed and undeveloped or underdeveloped. Therefore laying claim to an illustrious scientific and technological heritage was more than a scholarly endeavor—it was a political manifesto." <sup>97</sup>

The division of the world into a new East and West and designation of science as a product of European, and then American, exceptionalism had profound implications on the categorization of museum objects of Islamicate origin. Steiner writes that:

 $^{\rm 94}$  The Alhambra Decree, or Spanish Edict of Expulsion.

<sup>&</sup>lt;sup>95</sup> Connery 2010:685-686.

<sup>&</sup>lt;sup>96</sup> Edward Said. Orientalism. 1978:49.

<sup>&</sup>lt;sup>97</sup> Bektas and Sherman 2013:631.

In the late nineteenth century, Pitt-Rivers dealt his hand in the classification of artifacts at the ethnographic museum at Oxford—insisting that objects could be classified according to genera and species like so many specimens from the natural world. In the early twentieth century, Franz Boas shuffled the cards anew and dealt his hand in the arrangement of objects at the American Museum of Natural History—according to criteria of culture history and ethnic provenance. Changing views in social theory demanded radical changes in the sequencing and juxtaposition of material culture in museum exhibits.<sup>98</sup>

He continues, "the ordering and reordering of objects and representations in national museums can serve to legitimate or "naturalize" any given configuration of political authority." The political and scientific authority of the young nation was constructed at the Smithsonian against a backdrop of re-semanticized objects from abroad.

The sculpted goddess *Columbia*'s sword and protective vigil over the personifications of Science and Industry at the Smithsonian's first dedicated museum building were installed to oversee "some forty trainloads" of objects from the 1876 Philadelphia Centennial Exposition that had been moved to the Institution in commemoration of the one-hundredth anniversary of the nation's birth. The area flanking the Smithsonian Castle, the nineteenth-century "anchor for the National Mall," became the center of the young nation's curiosity cabinet, and eventually a microcosm of a remade global political order. Founded "at Washington...for the increase and

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 $<sup>^{98}</sup>$  Christopher B. Steiner. "Museums and the Politics of Nationalism." *Museum Anthropology* 19(2):4, 1995.

<sup>&</sup>lt;sup>99</sup> Steiner 1995:4.

<sup>&</sup>lt;sup>100</sup> McAdams in Park and Carlhian 1987:9.

<sup>&</sup>lt;sup>101</sup> Smithsonian Archives. "Arts and Industries Building."

diffusion of knowledge among men," the Smithsonian grew from the confines of the Castle building, which originally "housed all aspects of Smithsonian operations, including research and administrative offices; lecture halls; exhibit halls; a library and reading room; chemical laboratories; storage areas for specimens; and living quarters for the Secretary, his family, and visiting scientists." The growing museum collections were moved in 1881 to the newly constructed National Museum Building next door, later known as the Victorian Arts and Industries Building.

In its new configuration, artifacts from "as far away as the Philippines and China and Japan joined displays of European and American manufacture" inside, all under the watchful eye of *Columbia's* protection. The construction of identity and authority with these objects began in the earliest days of collecting. Steiner has written that anthropological museums were "born out of a need or desire to create order out of the material debris of culture contact ... [since] the Age of Discovery." Citing Steiner, Yeoh writes that "museums in the contemporary world of nation states are now charged with the need 'to represent themselves to themselves' as well as 'to represent themselves to others." Depictions of Science and the Other have been primary tools deployed to both ends, with artifacts of Islamicate science used to construct the history, mythology and identity of a fledgling United States.

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<sup>&</sup>lt;sup>102</sup> Smithson in Park and Carlhian 1987:8; Smithsonian Archives. "Arts and Industries."

<sup>&</sup>lt;sup>103</sup> McAdams in Park and Carlhian 1987:9.

<sup>&</sup>lt;sup>104</sup> Steiner 1995:4.

<sup>&</sup>lt;sup>105</sup> Yeoh, Brenda S.A. "Museums and the cultural politics of displaying the nation to the world." *Identities: Global Studies in Culture and Power* 24(1):49, 2017.

The frontiers of knowledge and the frontiers of the nation have converged literally and symbolically on the Smithsonian quadrangle lawn since the Castle building was first constructed. As the Smithsonian grew along with the nation, specimen samples and data poured in from its borders, and buffalo and bison grazed the National Zoological Park, the area now cultivated as the Haupt Garden, "indicating to new generations that this most American of all animals was being systematically wiped out in the western territories." <sup>106</sup> The exotica of the zoo eventually gave way to fresh symbols of America's expanding horizons with the gift at the turn of the century of over seven-thousand "very fine examples of Oriental, Egyptian, and Near Eastern fine arts" by railroad industrialist, Charles Lang Freer. 107 The Freer Gallery of Art opened on what would become the quadrangle in 1923, displaying art from "China, Japan, Korea, India, Pakistan, Turkey, Iran, Iraq, Syria, and Central Asia." 108 Also established at the end of World War I was the National Air Museum, a building first constructed by the military for the repair of demonstration fighter planes during the years of conflict. 109 This collection grew after World War II to include massive rockets, that "towered on the South Yard<sup>110</sup> like sentinels." "Rocket Row," as it came to be called, pointed skyward towards America's newest frontier. 112

The international reach of the quadrangle grounds expanded again in 1979 with the acquisition of the Museum of African Art, founded by Warren M. Robbins, and again with the donation of

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<sup>&</sup>lt;sup>106</sup> Smithsonian Archives. "The South Yard." <a href="https://siarchives.si.edu/history/exhibits/pictures/south-yard.">https://siarchives.si.edu/history/exhibits/pictures/south-yard.</a>; Park and Carlhian 1987:113-114.

<sup>&</sup>lt;sup>107</sup> Smithsonian Archives. "Freer Gallery of Art." <a href="https://siarchives.si.edu/history/freer-gallery-art">https://siarchives.si.edu/history/freer-gallery-art</a>.

<sup>&</sup>lt;sup>108</sup> Ihid

<sup>&</sup>lt;sup>109</sup> Park and Carlhian 1987:114.

<sup>&</sup>lt;sup>110</sup> The land now occupied by the Smithsonian quadrangle was referred to as the South Yard before its construction.

<sup>&</sup>lt;sup>111</sup> Park and Carlhian 1987:114.

<sup>&</sup>lt;sup>112</sup> Smithsonian Archives. "The South Yard."

1,000 art objects from Asia and the Near East by Arthur M. Sackler in the 1980's. These collections would become the twin beating hearts of the underground construction of the quadrangle museum complex, connecting the Smithsonian Castle to global worlds of art, just footsteps from its front door. At its completion in 1987, the Enid A. Haupt Garden would incorporate the "smaller gardens" of Asian and Islamic design that are "tucked among the museums," annexing them into a larger narrative of America's position in the world.<sup>113</sup>

The microcosm of the world assembled and constructed on the Smithsonian quadrangle is the brainchild of multiple generations of collectors, curators, and architects. Bal has argued that collecting and narrative are similar forms of semiotic storytelling, and taking up this point, Robinson argues that "it could be said that although museums, libraries and archives proceed along the path of memory together a certain way, only museums continue through additional steps to actively and self-consciously author historical narratives through their objects," doing so in the form of exhibits.<sup>114</sup> Robinson argues that:

Apart from the technical functions of cataloguing, describing and preserving collections (which, of course, embody their own set of subjectivities), the distinctive value of museums is their ability to contextualise collection objects within broader thematic and narrative groupings enabling visitors to engage with more complex ideas about history and 'memory."

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<sup>&</sup>lt;sup>113</sup> Smithsonian; Annette B. Ramiriz de Arellano. "*The Fountain Garden*." The Smithsonian Gardens Website. https://smithsoniangardens.wordpress.com/2014/04/30/the-fountain-garden/, 2014.

<sup>&</sup>lt;sup>114</sup> Bal, Mieke. "*Telling Objects: A Narrative Perspective on Collecting*." *In* The Cultures of Collecting. John Elsner and Roger Cardinal, eds. Reaktion Books: London, 1994:100; Robinson 2012:423.

115 Robinson 2012:422.

The storytelling done by museums extends outward beyond the taxonomies of collecting into the poetics of public display. And there is a tension, at times, in those stories between nationalism and attempts at cosmopolitanism. Ang asserts that "while cosmopolitanism, in its ideal form, endorses a borderless, global world, nationalism inevitably establishes boundaries, and the separating out of 'us' and 'them.'"<sup>116</sup>

Levitt characterizes the tension between "us" and "them" as a "cosmopolitan-nationalism continuum" having to do with the unique circumstances of individual institutions, including their:

histories, funding, collections, and curatorial expertise...with whether museums are public or private—with whether they are tools governments use to pursue social goals or whether they are mostly beholden to a changing cast of donors and visitors...[with] their scope—whether they were founded as museums of art...or as museums of artifacts...[and with] their position on the global stage [Levitt 2015:3].

In the case of the Smithsonian quadrangle, the motivations and circumstances of the collectors whose donations comprise its galleries are not homogenous. Robinson writes that:

first, if the motivations of the collector are the centre or 'motor' of the narratives produced through the collection objects (Bal 2004), it follows that if the identity of the narrator shifts from a single entity to a converged amalgamation of two or more, so too

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<sup>&</sup>lt;sup>116</sup> Ang, Ien. "What are Museums For? The Enduring Friction Between Nationalism and Cosmopolitanism." Identities 24(1):4, 2017.

must the motivations behind the collection, thereby inevitably altering the shape of its narratives in some way.<sup>117</sup>

So, at the heart of our national collections, we have the amalgamation of the motivations of James Smithson, the United States Congress, Charles Lang Freer, Warren M. Robbins, Arthur M. Sackler, S. Dillon Ripley<sup>118</sup> and every other Secretary and member of the Board of Regents, countless architects and designers, and Enid A. Haupt. Beyond these motivations, we have those of each preceding generation of curators, interpretive specialists, content specialists and exhibit developers. Each of these individuals, together, forms a multi-vocal chorus, telling stories to each new generation of audiences.

The next section of the chapter will walk through a selection of exhibits at the Smithsonian and other institutions whose collections or mandates overlap significantly with the material culture of Islamicate science, with an eye to pinpointing the nature of the stories being told. In each case, I will take Robinson's cue to "consider the particular collection management and description standards of each collecting domain as plotting devices, where the objects are arranged to communicate different stories." <sup>119</sup> Because the artifacts involved are the physical traces of an actual historical phenomena, these stories can be viewed as historiography, though their connection to nationalist motivations often produce something closer to mythology. But as either fact or fiction, they construct stories about a real past and orient visitors to a specific place and trajectory in the world. Pointing to the "historiographic processes at work" in museums,

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<sup>&</sup>lt;sup>117</sup> Robinson 2012:424.

<sup>&</sup>lt;sup>118</sup> The Smithsonian's former Secretary who conceived the quadrangle project.

<sup>&</sup>lt;sup>119</sup> Robinson 2012:423.

Robinson observes that "curators become arbiters of what should be considered historically significant, [and are therefore] charged with the responsibility of interpreting which aspects of material evidence from the past are not only retained but also represented in meaningful ways for contemporary and future generations." <sup>120</sup> In some exhibits, the material evidence of an Islamic contribution to science is omitted completely, in others it is re-semanticized beyond recognition, while in a few, it is remembered and meaningfully interpreted.

### **Finding Our Way**

Artifacts of navigation have an intensely political trajectory in American museum collections. Critical navigational instruments in premodern times, and first invented in antiquity somewhere in the interstices between Egypt, Anatolia, and Greece, astrolabes eventually came to dominate astronomy in the medieval and early modern Islamicate world. Their many uses, including in navigation to locate the altitude of stars, calculate time, and orient the believer towards Mecca, spanned the geographic and cultural reach of premodern Islam. Astrolabes fashioned in Arabicand Persian-language contexts inspired subsequent generations of maritime navigational devices produced in Europe. The navigational origin story of modernity was built on this object's back, and the subsequent generations of maritime navigational aids that followed retained a close genealogical relationship. In the premodern history of astronomy and human navigational science, the astrolabe was the discovery of fire. This brief survey of their role in Smithsonian exhibits reveals the use of astrolabes as a narrative tool for constructing origin stories about the modern West using objects from the premodern East.

<sup>120</sup> Robinson 2012:414; 421.

I argue that the historical astrolabe, with its ancient and cosmopolitan origins, has come to function in American museum display as an amulet that bears this origin myth of the nation within its being. The foreign mother of an American son, it is naturalized in museum practice as the precursor to American navigational and technological prowess, its Arabic and Persian inscriptions left untranslated and uninterpreted in displays about the onward march of progress.

"The beginning of the conquest of space in the 1950s and 1960s" resulted in the reconfiguration of the Smithsonian aerospace collection into the National Air and Space Museum we know today. 121 Of the dozens of astrolabes owned by the Smithsonian, the handful on public display are all deployed within exhibits on loan to the National Museum of Air and Space. In the entryway of the building there is a larger-than-life mural of an American astronaut in a spacesuit, planting a flag on the moon with one hand, and holding a tool with the other. The implications of conquest in the image of his hand on the flag are clear, but it is the tool in his opposite hand, and the tools on display in the museum, that are implicated as being responsible for American victory.

The "Time and Navigation" exhibit is organized into five sections around the themes of navigating the sea, the air, and space, inventing satellite navigation, and navigation for everyone. A large, blue label at the entrance begins the narrative of navigation "in 1700" with "Europe's mariners and mapmakers." By beginning the exhibit in 1700 Europe, the protagonists of the history of navigation have been clearly identified by the museum as European, and the global scientific foundations of maritime navigation simply erased. No mention of pre-European

<sup>121</sup> Smithsonian Archives. "The South Yard."

navigation appears in the exhibit, at all, save a tiny sketch of ancient Polynesians in the introductory hallway. Sundials, astrolabes, and astrolabe quadrants are displayed, but with no indication of how they came into use in Western Europe. Several navigational instruments, some clearly emulating the Islamic style, are displayed decoratively as a frame around a replica of the *Mariner's Mirrour*, a sixteenth-century European book of nautical charts. The spatial arrangement of the instruments framing the book makes them look entirely European in origin. This obfuscation-to-the-point-of-inversion of the directionality of influence is put into plain language in an article about astrolabes in the Smithsonian's magazine, which claims that astrolabes "traveled out of Europe and into the Islamic world by the 8th century." 122

What is the point of this kind of narrative, which in this case reads like an outright historical lie? What does it tell us about the function of the astrolabe as a totem for European-American exceptionalism? Historian David Edgerton characterizes what he calls narratives of "invention-chauvinism" as forms of "techno-nationalism" that pervade political and historical discourse, and museum studies scholars like Bektas, Sherman, Levitt and Ang locate national museums as primary sites for this narrative identity formation. 123

The Smithsonian exhibit progresses teleologically, crediting all early innovations in navigation and timekeeping to Europe, advancing onwards towards displays on American military GPS and satellite navigation. Exiting the doors of the exhibit and into the light visitors are confronted

<sup>&</sup>lt;sup>122</sup> Laura Poppick. "The Story of the Astrolabe, the Original Smartphone." Smithsonian Magazine, 2017. https://www.smithsonianmag.com/innovation/astrolabe-original-smartphone-180961981/

<sup>&</sup>lt;sup>123</sup> Edgerton, David. *The Shock of the Old: Technology and Global History Since 1900.* Oxford: Oxford University Press, 2011:102-103; Bektas and Sherman 2013:631; Levitt, Peggy. *Artifacts and Allegiances: How Museums Put the Nation and the World on Display.* Oakland: University of California Press, 2015:3; Ang 2017:1.

with a giant Tomahawk missile and field of upright rockets. The exploration of scientific instruments in "Time and Navigation" seems to have imported the race to space backwards in time, to its earliest star-gazing roots.

Another Air and Space exhibit titled, "Explore the Universe," is across the hall and focused on the development of astronomical tools of observation, like the telescope. The entrance is covered with pitch-black paint, creating a darkness that extends into the exhibit, mimicking the night sky. The exhibit progresses from an environment of immersive darkness which is gradually punctuated with increasingly intense light as the chronology of technological progress unfolds. The darkly-hued initial gallery is flanked by architectural columns and a set of arched doorways that evoke the Islamicate or Mediterranean worlds. The room is dimly lit and contains a central, narrow artifact display case filled with astrolabes hidden in shadows. The opposite wall contains brilliantly lit depictions of the Greek model of the universe and a discussion of Ptolemy and Copernicus, but the astrolabe display case in the center of the room is so dark it is difficult to see the Arabic script engraved on the objects. Upon examination, it is clear that this is an intentional, interpretive choice, and meant to contrast with the illumination to follow. Interpretive labels describing the provenance of an eleventh-century astrolabe and a seventeenthcentury celestial globe in the case as simply, "Islamic," with no specific countries or sites of origin listed also contrast with the clearly-labeled, seventeenth-century "French Astrolabe" displayed alongside them. On the opposite wall, Ptolemaic and Copernican maps of the universe blaze brilliantly, literally made out of light.

The exhibit path progresses past portraits of European astronomers who are each identified by name and pictured with their tools. Although the few instruments of Islamic origin are very non-specifically labelled in the previous gallery, no Islamic astronomers are identified by name or image. A reproduction of a manuscript painting of the Istanbul observatory is displayed, beside a reproduction of a painting of medieval Christian astronomer-monks and Danish astronomer, Tycho Brahe.

The light becomes an even more obvious component of the exhibit design as the exhibit transitions into its Act Two, where the sun has shifted to its central place in the Copernican cosmos and the science of optics reigns supreme. In the subsequent galleries, the darkness gives way to more objects made of intense light, and labels explaining the role of photography and spectroscopy chronicle how astronomers used "photography to capture light from celestial objects, [while] they were also learning how to analyze light itself." There is no mention of the geographic or cultural origins of optics.

Light and darkness seem to be used in two ways in the exhibit, first as markers of the chronology of astronomical advances progressing teleologically towards heliocentrism and spectroscopy, and also as symbolism equating light with increasing knowledge and darkness with error. Within this rubric, visitors walk through the Dark Ages towards the Enlightenment, and beyond into the digital present. As spatial historiography, this story is misleading, and the inclusion of "Islamic Astrolabes" with no named provenance in a shadowy display case physically centered in a room framed by Ptolemy on one side and Brahe on the other produces an incorrect assumption that

 $<sup>^{124}</sup>$  Smithsonian National Air and Space Museum 3

Islamicate astronomy was stuck in the past, or universally in agreement with Ptolemy. As noted by Bektas and Sherman, the thirteenth-century observatory at Marāgha, in present-day Iran, was "especially reputed for its school of astronomy critical of the Ptolemaic planetary system," advancing arguments and mathematical tools taken up by Copernicus in his assertion of heliocentrism.<sup>125</sup> But the facts of history, here, conflict with the narrative of the exhibit, and are left in the dark.

Eastern astrolabes meet a similar fate across the spectrum of science museums in the United States, with the exception of a handful of institutions, like the Adler Planetarium. Their decontextualization takes many forms, but their re-semantization as the deep, European roots of a thoroughly American future is consistent. They are exhibited as genealogical objects and carriers of a teleological future leading the world to Columbus and beyond. For example, the labeling on the astrolabe display at the Hayden Planetarium at the American Museum of Natural History interprets astrolabes for visitors in the following terms: "the astrolabe helped explorers like Christopher Columbus..."

Astrolabes are paradoxically more reliably exhibited in American art museums than in science museums. At the Art Institute of Chicago, a single, nineteenth-century Iranian planispheric astrolabe sits in a large display case, alone with a sixteenth-century Italian plate. The juxtaposition of the astrolabe with the ceramic plate is perplexing. The label discusses lustrepainting with absolutely no information about the purpose or functions of the astrolabe, it isn't

<sup>&</sup>lt;sup>125</sup> Bektas and Sherman 2013:625; Ragep 2001:145

<sup>&</sup>lt;sup>126</sup> American Museum of Natural History 3

even identified as a scientific instrument. This decontextualization reduces its status to just a decorative metal object, a thing, like the plate, that is both round and shiny. The labels in the area do provide some historical context about the history of Islamic science generally, but no information, at all, about astrolabes. Without this context, the astrolabe is, again, reduced to its aesthetics.

The Metropolitan Museum of Art's galleries of Islamic art display a disassembled, thirteenthcentury Yemeni astrolabe next to a twelfth-century Abbasid Qur'an that features pages with golden, astrolabe-shaped margin medallions. The astrolabe is present to demonstrate artistic inspiration and the cross-pollination of artistic forms. In this instance, shape and color are the primary interpretive qualia of the objects, which, though understandable for an art museum, drives home the taxonomies that determine how objects are assigned institutional homes. Conn writes that "careful observation followed by taxonomic classification drove the pursuit of scientists and provided a guide with which the world could be understood," and that museums became the "institutional nexus" of this taxonomic activity. 127 The taxonomic classification of objects bled into the identity-formation of academic disciplines and formation of unique museum institutions. Each object was assigned a type, each type assigned a field, and each field assigned an institution. Though, because of these taxonomies, we would be surprised to see a scalpel, plastic prescription bottle, surgeon's mask, or GPS device displayed in an art museum, the taxonomic structuring of objects has naturalized the premodern Islamic equivalents of these objects into predictable positions in Western art exhibits.

Another example can be seen in glass objects frequently displayed by art museums across the United States. At the Art Institute of Chicago, a case towards the end of the gallery of Islamic Art contains a large, blue glass flask with a swan-shaped neck and unusual mouth. Its label reads:

Swan-Necked Flask

19th Century

Qajar Dynasty (1779-1925)

Iran Glass, Partially-Blown Mold

Gift of Mrs. Charles H. Schweppe, 1927.849 [Images 141-142]

There is nothing about this label or any interpretive materials in the exhibit that would incline a visitor to believe it is relevant in any way to the global history of science and medicine. It is brightly colored and elegantly made, and it seems at home as an object of art in an art museum. The swan-necked flask in the exhibit is called, in Persian, an *ashkdān*, and many are prized collection items in art museums around the world. The University of Michigan Museum of Art displays one, labelled a "Persian rose water sprinkler," made by Louis Comfort Tiffany. A strange mythology has grown up around these objects, and their confusing shapes, which permeates the manner in which they are interpreted in exhibits. A publication of the Metropolitan Museum of Art describes an *ashkdān* donated to its collections in 1891 in the following terms:

This bottle belongs to a larger group of glass vessels tinted in hues of amber, blue, green and rose in the collections of the Metropolitan and other museums. There has not been a

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<sup>&</sup>lt;sup>128</sup> University of Michigan Museum of Art Object 1972/2.223

satisfactory explanation of the unusual shape of this bottle in terms of its function, but its visual resemblance to the curved and attenuated neck of a swan has inspired its name. According to folklore, these bottles were used as rosewater sprinklers or as "containers for tears," *ashkdan* in Persian, meant to collect the tears of wives separated from their husbands [Ekhtiar 2011:280].

The idea that "tear collectors," or *lacrimaria*, small vessels found in graves, domestic, and religious spaces in the Hellenic world, were used to collect the tears of the mourning has been dismissed by scholars as poetic.<sup>129</sup> In the case of Persian *ashkdāns*, it seems, perhaps, more plausible that these objects are poetically referred to as *tear collectors* because they were often used to store distilled liquids, which are produced through evaporation and condensation, the purified liquid dripping down like tears from the condensate inside of alembics when they are produced. The language of distillation often uses bodily terms like *sweat* and *tears* to describe stages of condensation. Similarly, the curved necks of *ashkdān* would also produce visible internal condensation under the right environmental conditions.

Each of the bottles has a similarly formed, unusual mouth at the top of the swan neck, which museum interpreters have, thus far, been unable to explain. Two publications from the Metropolitan Museum of Art write that, "it is unclear how bottles of this shape were used," and "there has not been a satisfactory explanation for the unusual shape of this bottle in terms of its

<sup>&</sup>lt;sup>129</sup> Virginia R Anderson-Stojanovic, The Chronology and Function of Ceramic Unguentaria, American Journal of Archaeology, 1987:91(1):106. Thanks to Ian Moyer for the connection of shared terminology in Hellenistic vessels to the *ashkdan*.

function."<sup>130</sup> If the bottles were, in fact, meant for long-term use, as storage vessels for liquids poured into them from shoddier, more breakable bottles used for transit, the strange function of the strange mouth seems clear: the lower curved lip of the mouth receives the mouth of a straight-necked bottle or flask, and the belly of the swan-necked bottle stores the liquid for an indeterminate period of time. When the liquid is ready to be served, the upper lip of the strange mouth functions as a spout.<sup>131</sup>

These are the arts and crafts which the Persians practice well enough; those in which they are unsuccessful are the following:

Glass-making. There are glass houses all over Persia; but the glass is for the most part flawed, full of seed and bubbles, and greyish in color; which proceeds, no doubt, from the fact that their fire lasts only three or four days...their...heath...does not give such a strong heat as ours...they have no knowledge of silvering glass...for the rest, the art of making glass was introduced into Persia only eighty years ago. An Italian, poor and avaricious, taught it at Shiraz for fifty crowns (Chardin in Charleston 1974:18).

Chardin's condemnations of the Persian heath, fire, knowledge, technique, and quality of glass aside-glass-making, in fact, originated in the Middle East and has been practiced in Iran for 3,500 years.# In other words, it was not introduced recently by a disgruntled Italian. In the Safavid period, Venetian glass was imported into Iran, but glass-production in Iran was continuous. A label on "Late Persian Glass" at the Metropolitan Museum of Art describes glass production under the Qajars:

Blown glass in the Islamic world usually involved creating a blown vessel inside a mold. Under the Qajars in Iran, however, Iranian artisans developed a technical mastery of free-blown and trailed glass similar to that practiced for centuries in Murano, near Venice. Manipulating the viscous molten glass with virtuoso skill, they produced a marvelous series of almost-organic bottles with curved necks...popular at home and abroad, these works stand as vivid testimony to the vibrant state of the arts in nineteenth-century Iran.

Another Frenchman cited by Charleston, a Capuchin priest on a mission to Safavid Isfahan by the name of Du Mans, writes about re-melted glass production, opining:

they put the glass directly into the furnace, and not into a glass-pot; this fire, which is only half-shielded and mixed with flying cinders, causes the glass to become (instead of colorless and clear, as it was) half-black, full of flaws and blebs. Also, they make nothing here but bottles, for of

<sup>20</sup> 

<sup>&</sup>lt;sup>130</sup> The Metropolitan Museum of Art; Ekhtiar 2011:280.

The 1974 work of Charleston, "Glass in Persia in the Safavid Period and Later," is often used as a framework for contextualizing the provenance of ashkdāns. Charleston surveys the accounts of European travelers to Iran in the sixteenth and seventeenth centuries, cataloguing their descriptions of glasswares and production methods encountered on their trips. Based on the accounts of Tavernier, Herbert, and Chardin cited in this work, it is clear that the production of long-necked bottles in many forms was associated with the wine industry in Iran, particularly in Shiraz. Bottle production is also described there for the transport of rose water, perfumes, and pickled fruits (See Tavernier, Herbert, and Chardin in Charleston 1974:16). A primary source for discussions of the production of bottles in Iran is found in the writings of Chardin, a Huguenot jeweler who describes the array of bottles he encountered there in some detail. A seventeenth-century French traveller, his general attitude towards glass-making in Persia is, perhaps, colored by the prejudices of his historical moment. In an oft-cited passage, he recounts everything he thinks the Persians are doing wrong:

The critical leap in museum interpretation of these objects arises from triangulating the facts about the physical thingness of the bottles with what we know about the history of their production in Iran and the larger technological and scientific context in which they appear. The swan-neck shape of the bottles' necks does not just fulfill a decorative purpose, but a scientific one, in the service of public health. In 1859, this function was demonstrated to a global audience through an experiment that has been celebrated in grade-school biology textbooks almost ever since for revolutionizing humanity's understanding of the causes of disease. Louis Pasteur used swan-necked bottles to disprove the dominant theory of spontaneous generation or miasma, the idea that the air, itself, as a non-living thing, could generate disease independently, without the aid of a living parent-microbe. By storing a liquid in a swan-necked flask that allowed the free flow of air, but, because of its awkward shape blocked the entry of dust (and microorganisms), Pasteur was able to prove that it was the dust, and not the air, that caused contamination. As long as he left the bottles undisturbed, the liquid remained free of contamination, as any dust settled within the neck as a type of filter. This famous "savior with a swan's neck" is credited

that beautiful glass which charms the sight with the lovely hue of a September dew, there is no usage here, nor do these wretches here deserve it. This calling of glass-maker does not presuppose gentle birth, as in France, those here being, like the rest, of the dregs of the population [Du Mans in Charleston 1974:18]

Charleston and his sources more charitable than this "hostile account" make clear that fine glass was produced in Iran, and glass-production, itself never ceased (Charleston 1974:18-19). The above passage by Du Mans seems to be saying that for lack of the richly-hued bottles produced in Shiraz, the glass-makers he describes must produced recycled, re-melted bottles of inferior quality. This may imply an intended permanence to the Shirazi bottles, versus the lower quality objects. Close examination of the Shirazi swan-necked bottles seems to give further evidence supporting this theory. The bottles often have large, prominent punts at their bases, to aid stability, and simple stripes on the glass that would add strength. Additionally, colored glass prevents the oxidation of wine or other contents by protecting it from excessive light (Dias 2012).

<sup>&</sup>lt;sup>132</sup> Gale in Needham 1970:40

for the development of modern germ theory and biomedical knowledge of the mechanisms and prevention of infectious disease. 133

Pasteur's simple insight was that if you store a liquid in a swan-necked bottle, it will preserve its shelf-life and prevent disease-causing contamination. The diagrams of his flasks in medical textbooks now look like modern scientific equipment, <sup>134</sup> with the graceful swan-neck replaced with a tube more closely resembling an alembic. But his original bottles have been preserved at the Pasteur Institute in France, as well as replicas of the bottles produced by the Institute for other museums. <sup>135</sup> The originals are made of clear, rather than colored glass. A replica at the Science Museum of London, made by the Pasteur Institute, bears an uncanny resemblance to the swan-necked Persian *ashkdān*. <sup>136</sup>

## **Changing Course**

The Islamic galleries of the Metropolitan Museum of Art were recently redesigned and are luscious and vast, containing countless examples of technological expertise. Sheila Canby, the Curator of the Department of Islamic Art, states that throughout the collection, "technical expertise of the highest level is always evident, no matter what the medium... [objects] can

<sup>&</sup>lt;sup>133</sup> Corning 2016

<sup>&</sup>lt;sup>134</sup> Strick 2016

<sup>&</sup>lt;sup>135</sup> Pasteur Institute; Science Museum of London

Although swan-necked vessels preceding Pasteur have been attributed to Venetian glass-makers in both scientific hagiographies on the origin of the swan-necked flask and in art museum labels, it is unclear whether or not *ashkdān* have an actual functional or structural precedent in Venetian glass, due to a lack of evidence (Page 2006:72). It is unclear if Italian techniques were modified in Iran and applied there to uniquely Iranian forms, or if the forms themselves, were imported. The idea that the forms were Venetian seems to have come from the observation of a Murano-like, free-blown technique deployed on the necks, but the importation of foreign technologies to produce familiar or unique forms in Iran has been the historical norm. The attribution of the vessels to Venetian precedents comes first from our Frenchman, who believing in error that an "avaricious" Italian had introduced glass-making to Iran only decades before his visit, clearly did not always have his facts straight.

easily be appreciated both for their innate utility and for their astonishing beauty."<sup>137</sup> Artifacts related to science and medical practice pepper the exhibit. Sprinklers and incense burners used to administer rosewater, perfumes and fumigated medicines recur throughout the galleries, as do flasks and other containers, including a thirteenth-fourteenth century beaker from Syria. The first gallery after the Introductory space, on the Umayyads and the Abbasids, contains a label with the following text:

Intellectual and Cultural Legacies of Islam

The role of Islamic civilization in preserving the legacy of classical science, medicine, and philosophy has long been known and appreciated in the West. Less well understood have been the original Islamic contributions to philosophy, science, and technology that also form part of an enduring legacy. Medieval Aristotelian scholars such as the Central Asian philosopher Ibn Sina (Avicenna, 980-1037) or the twelfth-century Spanish philosopher Ibn Rushd (Averroes, 1126-1198) were among the most original philosophers of their time, along with the great thirteenth-century Italian, Saint Thomas Aquinas. The historical methodology of the Tunisian Ibn Khaldun (1332-1406) was the most advanced of its time.

Building on the legacy of Greek and Roman medical and pharmacological texts, Islamic medicine saw major advances in scientific knowledge, which was passed onto Europeans both before and after the Age of Discovery.

The label goes on to describe Islamicate contributions to music, fortification, metallurgy, and glass, ceramic and silk production. This framing of objects connected to science in the galleries

<sup>137</sup> Canby in Metropolitan Museum of Art 2011

is an example of an art museum working across taxonomic and disciplinary divides to interpret and recontextualize objects in their collections.

In the course of conducting this research, I had the opportunity to speak with Sheila Canby and Massumeh Farhad, the chief curators of Islamic art for the Metropolitan Museum of Art, and the Freer and Sackler Galleries at The Smithsonian Institution, respectively. Several common themes emerged in our conversations. First, both institutions began their reconfigurations of Islamicate art for structural reasons, having to do with updating the larger building facilities around their objects and adjacent galleries. Change rears its head, sometimes, in the form of old buildings that need updating so as to preserve art for future generations. But in both cases, the opportunity presented by practical necessity was seized to proactively explore new stories that challenged outdated interpretative strategies and to reimagine the place of Islamicate objects in American museums. The Metropolitan Museum consciously nuanced the idea of "Islamic" culture or art by more carefully naming and foregrounding the specific geographic provenance of objects from the multiple cultures represented in their Islamicate collections. The galleries tell a story of diversity as much as of cohesiveness, and the gallery environment, itself, immerses visitors in architectural spaces that incorporate museum artifacts into a world centered in these lands. The Freer Gallery reopened in October of 2017, with galleries reimagined along themes meant to engage contemporary audiences.

Museums are increasingly analyzed as "possible sites for social change by virtue of their capacity to represent the interests and concerns of minority groups," though Ang argues that national museums are "too deeply embedded within the nation state to be able to present

cosmopolitan narratives that go beyond the biased particularities of the nation."<sup>138</sup> Modern institutions have inherited important artifacts of science and medicine in their collections and the taxonomies that have structured their operations from day one. The line between nationalism and cosmopolitanism is still, sometimes, hard to see. The needle between nationalism and cosmopolitanism hovers between the motives of historical collectors and contemporary museum professionals who are writing the narratives of the future.

Canby spoke of her staff members who left their desks to go give impromptu talks in the exhibit after Trump's Muslim Travel Ban was announced, hoping that if visitors could see the humanity and cultural sophistication of Islamicate societies they might be inoculated from the taxonomies of Us versus Them. S. Dillon Ripley, the former Secretary of the Smithsonian whose vision for the quadrangle led to its construction wrote, "for us in the West, it is now time to look beyond our immediate horizon. We need reminders of the two-thirds of the world that are not Western... The quadrangle will emphasize the diversity and oneness of us humans. I consider it the most significant project the Smithsonian has ever undertaken." Arthur M. Sackler concurred, writing, "what the quadrangle means to me is that we are recognizing ourselves as part of a total world- larger than that of a western world or of a European world- one which encompasses all continents." 140

Thomas Lawton, director of the Freer and Sackler at the time of the construction of the quadrangle and its underground facilities, hoped that it would "be more than a museum, more

<sup>&</sup>lt;sup>138</sup> Ang 2017:1

<sup>139</sup> Ripley in Park and Carlihan 1987:11

<sup>140</sup> Sackler in Park and Carlihan 1987:10

than an underground complex of steel and granite. It is an idea. An idea that has grown out of a single need- our need to know about art, cultures, and peoples that are beyond our immediate horizon, the great diversity of the non-Western world, the imagination and genius that are Africa, the Middle East, and Asia."<sup>141</sup> For future reconfigurations to succeed in these lofty goals, the taxonomies that divide and construct East and West, and decorative arts and science, must be made visible, a task which is hardest to accomplish when they are hiding in plain sight.

In addition to the need to consider the ethical ramifications and recapitulations of colonial networks of power related to shipwreck recovery in Southeast Asia, the position of shipwreck artifacts from the Maritime Silk Road must also be evaluated in relationship to the historical erasures of Islamicate intellectual history on the ocean that have gone hand in hand with the Westen creation myth of science and modernity. The taxonomies of collection have been a primary site of this erasure and represent an arena of intervention made possible through careful attention to the past lives of these objects, and the stories of their creation and circulation across the trade routes.

<sup>&</sup>lt;sup>141</sup> Lawton in Park and Carlhian 1987:16

#### **CHAPTER II**

The Phoenix's Body: Community, Collecting, and Resilience in Coastal China

# Introduction

There are few discourses of history, whether modern or premodern, more nationalistic and prone to ethnocentrism than the history of medicine. Medical systems are represented as closed spaces of innovation and emblems of cultural pride, not as assemblages of theories, practices, and remedies that have been compounded together over the *longue durée* of transregional exchange. This is the case for every medical system that has a stake in the trade routes discussed in this dissertation, whether Traditional Chinese Medicine, Persian and Islamic Medicine, or Western Biomedicine. Perversely, medical knowledge and ingredients from Southeast Asia, which have been critical components in the development of each of the above named systems, are usually ignored. This dissertation takes the view that medicine has historically been a hybrid enterprise, created in the interstitial spaces between and within cultures.

The fact that history, meaning, and medicine are hybrids all the way down, that everything is a hybrid of other hybrids, does not diminish the blood in the water of political moments of violence and ethnic tensions. The Persian diaspora in southern China persisted over generations, across dynastic change, and in the face of periodic outbursts of profound hostility toward their presence. It is telling that one of the most enduring sources of evidence of their persistence is the

archive of their desecrated tombstones. But shattered graves and shipwrecks are not the only things Persians in China left behind.

## The Phoenix Mosque

In the tumultuous years of the early-thirteenth century, a mosque in the coastal Chinese city of Lin'an<sup>142</sup> was burned to the ground, leaving behind only the smoldering footprint of its foundation. Before its destruction, the mosque stood in the foothills of the Southern Song (960-1279) imperial complex, though it was first erected before the Song elite moved south to evade Jurchen incursions and made Lin'an their capital. The mosque had been a local anchor for several generations of foreign, seafaring merchants since its construction near the banks of the Qiantang River during the earliest centuries of Islam, in the Tang Dynasty (618-907). This position easily connected the community of merchants to both the East China Sea and, north, to the Grand Canal. After its walls were consumed by flames, the mosque's inner courtyard garden, once meant to evoke a heavenly paradise, was defiled as a drinking ground and rubbish lot until a Persian merchant and powerful supporter of Kublai Khan funded its restoration.

Stelae housed inside the mosque today are inscribed with memories of generational cycles of warfare and flames that periodically engulfed the complex, and the multiple generations of

<sup>142</sup> Hangzhou, Khinsai

<sup>&</sup>lt;sup>143</sup> According to the entryway plaque inside the Phoenix Mosque, "it was ruined in the third Jintai year of the Southern Song Dynasty (1203)," Amanda Respess, photograph, 2018, author's collection; 1648 and 1670 stelea in the mosque compound photographed by George Lane date the destruction to the closing years of the Song: George Lane, *The Phoenix Mosque and the Persians of Medieval Hangzhou*. (London: Gingko, 2018), 41, 221, 233, 235.

<sup>&</sup>lt;sup>144</sup> Lane 40.45.48.

"HuiHui, <sup>145</sup>" (Muslims) who protected and rebuilt it. <sup>146</sup> The city of Lin'an, known throughout the Islamicate <sup>147</sup> world in the times of Mongol rule (1256-1335) as Khinsai, and the Phoenix mosque at the heart of its Muslim community, were well-known to the literati inland of the Persian Gulf in Iran, including figures like Rashīd al-Dīn Hamadānī and Ḥamdallāh Mustawfī. <sup>148</sup> The mosque's fame glowed, in their reports, like a brightly-burning flame on the shore of the world's then-largest city. <sup>149</sup> Khinsai was a place where worlds combined, its riverbanks connected the world of booming foreign sea trade on China's southern coast with domestic shipping in the interior.

This is not an account of the historical particularities of the political or economic tensions that arose between sectors of Chinese society and the foreign merchants that populated coastal cities during China's Middle Period (618-1368), even though those conflicts resulted in innumerable deaths. It is not a story of military action, dynastic change, or urbanization, and it is unconcerned with dramatic shifts in court life. Though each of these elements are important dimensions of the context of maritime trade at any given moment in Middle Period China, Persian travelers made the journey by sea to Chinese shores long before and after each of these occurrences. This chapter, therefore, is a story about continuities amid disruptions, the long-term patterns of living, traveling, suffering, resilience, and innovation that constituted the lives and bodies of Persian travelers over the *longue durée* of premodern maritime contact between the Persian Gulf and

 $<sup>^{145}</sup>$   $\Box$   $\Box$ , a fluid term with shifting meaning over the time period discussed. Here, indicates Muslims.

<sup>&</sup>lt;sup>146</sup> Lane, *PMPMH*, 45.

<sup>&</sup>lt;sup>147</sup> 'Islamicate' refers to regional cultural traditions where Islam is predominant, but does not refer to religious affiliation, itself. See: Marshall Hodgson, *The Venture of Islam: Conscience and History in a World Civilization, Vols 1-3.* (Chicago: The University of Chicago Press, 1974), 58.

<sup>&</sup>lt;sup>148</sup> Lane, *PMPMH*, 35.

<sup>&</sup>lt;sup>149</sup> Janet Abu-Lughod, *Before European Hegemony*. (Oxford: Oxford University Press, 1989), 337.

South China Sea. In other words, this is not a history of why the Lin'an mosque burned, but of why and how it, and the Persian community, were continually rebuilt.

The migratory community of merchants that moved trade goods including spices, incense, herbs, medicines, and ceramics between the coasts of China, Southeast Asia, and Iran was a cosmopolitan, diverse body of individuals hailing from across the Indian Ocean littoral. The Persian merchants who lived in the vicinity of the Phoenix Mosque were described as "settlers" who were "for the most part river and ocean traders whose great ships with lofty masts travel safely in the boundless expanse of foaming waves...and goods from all parts flow in unceasingly" <sup>150</sup> The material footprints left on the ground and in the sea by these merchants, in the form of architectural spaces, tombstones, and the cargo of sunken ships, reveal a materialized sense of self that is relevant to both an understanding of the Persian experience of maritime travel to China and to the history of cosmopolitan maritime medicine that spread along the trade routes with great consequence. The Phoenix mosque burned and was rebuilt, was attacked and then reconstructed multiple times. Despite intrusions or changing fortunes, its structure has been painstakingly resurrected and its broken walls healed repeatedly over the course of centuries. In this chapter, the walls, roof, and courtyard of the mosque anchor an introduction of the historical context in which Persian merchants moved in Middle Period China and initiate a discussion of the themes that will be taken up in subsequent chapters. The anatomy of the mosque explicitly symbolized the social body of the Muslim community, and in this chapter it will also ultimately stand in as an analog for the resilience of the medical body. Migration, hybridization, and

<sup>1 /</sup> 

<sup>&</sup>lt;sup>150</sup> Stranger's Hill settlement described by Wu Zi Mu, cited in Arthur Christopher Moule's *Quinsai with Other Notes on Marco Polo*, (Cambridge: Cambridge University Press, 1957), 38; Lane, *PMPMH*, 45.

medical collecting are examined here as social and medical practices of resilience. This dissertation is concerned with the meanings Persian travelers made of the maritime world they inhabited, and the traces and consequences of those meanings that they left behind.

A stele still on display within the grounds of the rebuilt Khinsai mosque claims that when the local Muslim community reconstructed the prayer hall and perimeter wall from the ashes they emblazoned the Chinese word Fènghuáng<sup>151</sup> (phoenix) in calligraphy on its foundations.<sup>152</sup> The Phoenix mosque stood then, as it does now, in the shadow of Fènghuáng Mountain, a peak named for the mythological bird whose presence, in Chinese mythology, signified peaceful governance, and whose absence augured catastrophe. 153 But the Phoenix Mosque rose in the early Yuan Dynasty from the ashes of affliction, not in a contented era of tranquility. The symbolism of its rebirth from the flames and its pointed persistence, rather than absence, during a period of deep discontent and trauma are contrary to the mythological character of the Chinese fènghuáng. A phoenix that rallies, rather than departs, in a time of disharmony, resurrecting itself through catastrophe, may point towards signified meanings more obvious in the mosque's name in Arabic, rather than in Chinese. The Masjid al-'Anqā' (Phoenix Mosque) deploys the Arabic term 'Angā' for phoenix, a term that had come to include associations with the mythological birds of Arabia, Phoenicia, Egypt, Greece, and Iran before alighting in the nomenclature of the Khinsai mosque.

<sup>151</sup> 鳳凰

<sup>&</sup>lt;sup>152</sup> 1892 Phoenix Mosque stele, translated by Florence Hodous in Lane, 42.

<sup>&</sup>lt;sup>153</sup> James M. Hargett, *On the Road in Twelfth Century China*. (Stuttgart: Franz Steiner Verlag Wiesbaden, 1989), 236.

مسجد العنقاء 154

Phoenix symbolism in the Islamicate world, over time, amalgamated references to distinct mythological birds into composite imagery. The phoenix described by Herodotus and Pliny as a creature from Arabia that cyclically returned to Heliopolis to immolate itself and be reborn in a pyre of incense, or to rebirth its parent inside an egg of myrrh, <sup>155</sup> was a powerful symbol of resurrection. <sup>156</sup> Each account associated the bird's powers of regeneration with, not coincidentally, trade goods moved in bulk by the merchant community: incense, spices, and herbs including various resins, cinnamon, cardamom, cassia, and nard. <sup>157</sup> Incense was poetically regarded as the "scent of the phoenix," and its smoke, the cloud of life and death connecting the earth to the heavens. <sup>158</sup> The oldest surviving stele in the Phoenix mosque describes the masjid's own rebirth from the ashes of the Southern Song period, and the reclamation of its once-desecrated inner courtyard through the purifying work of the angelic hūriyy, <sup>159</sup> who utilized the transformative, perfuming power of another of the community's maritime products, ambergris. The stele proclaims that "the *Houris* <sup>160</sup> sweep" the courtyard "with their tresses fragrant from ambergris, "<sup>161</sup> eternally restoring its position as an outpost of Paradise on earth. <sup>162</sup>

<sup>155</sup> Pedro Buendía, "Acerca del Ave Fénix en las Tradiciones Islámicas," Al-Qantara 32, no.1 (2011):8-9

<sup>&</sup>lt;sup>156</sup> Herodotus, *The Histories of Herodotus: Book II*, trans. George Rawlinson. (London: Everyman, 440 BCE/1910), http://classics.mit.edu/Herodotus/history.2.ii.html; Pliny the Elder, Natural History. (London: W Heinemann, 1938), https://archive.org/stream/naturalhistory03plinuoft#page/292/mode/2up; also related to the *bennu* and *qaqnus* birds, Buendía, *Fénix*, 10.

<sup>&</sup>lt;sup>157</sup> Ovid, *The Metamorphoses: Book 15,* trans. Anthony S. Kline. (2000), 391-417, http://ovid.lib.virginia.edu/trans/Metamorph15.htm#488378554.

<sup>&</sup>lt;sup>158</sup> Brian Moeran, "Making Sense of Smell: Manufacturing and Consuming Incense in Japan," *Human Organization* 68, no.4 (2009):446.

<sup>&</sup>lt;sup>159</sup> A sacred feminine inhabitant of Paradise.

 $<sup>^{160}</sup>$   $h\bar{u}rivv$ 

<sup>&</sup>lt;sup>161</sup> Lane, *PMPMH*, 38, EG Browne trans.

<sup>&</sup>lt;sup>162</sup> Not a bad advertisement.

In addition to its associations with fire, rebirth, and resilience, the 'anqā' phoenix, narrated in a hadith of Ibn Abbās and described by al-Mas'ūdī, <sup>163</sup> was created by Allah as a sign of the station of Moses among the children of Israel. This creature combined the best of the earth's birds into a single hybrid, with a human face. <sup>164</sup> The creature was fashioned as a male and female pair and its generative powers soon overwhelmed humanity with unchecked fecundity and hunger. Buendía describes the resolution of this state of crisis and predation through the intervention of a pre-Islamic, minor Arabian prophet. <sup>165</sup> He regards this intervention as a symbol of the transference of "prophetic legitimacy" <sup>166</sup> from one divine messenger to another within the Abrahamic tradition. The bestowal of legitimacy and authority is a role common to sacred birds in the Persian tradition, and Buendía has traced the merging of the 'anqā' bird with the Persian simorgh in the work of al-Jāḥiz and subsequent writers. <sup>167</sup> The 'anqā' began as a composite of the earth's birds and was reborn as a hybrid of transregional cosmological symbols.

## The Phoenix's Body: A Commerce of Birds

The architectural complex of the ' $Anq\bar{a}$ ' mosque was constructed in the shape of a phoenix's body, with the building's footprint mirroring the anatomy of a bird. According to plaques and a map posted inside the mosque, the arched gate and moon viewing terrace represent the head of the phoenix, the wells on the north and south sides of the complex represent the eyes, the large

<sup>&</sup>lt;sup>163</sup> al-Mas ʿūdī, *Murūj ad-Dahab wa-Ma ʿādin al-Jawhar* (The meadows of gold and mines of gems), trans.
Aloys Sprenger. (London: Harrison & Co., 1841),

https://archive.org/stream/historicalencycl00masrich/historicalencycl00masrich divu.txt.

<sup>164</sup> Buendía, *Fénix*, 10.

<sup>165</sup> Khālid Ibn Sinān, Buendía, *Fénix*, 10.

<sup>166 &</sup>quot;legitimidad profética," Buendía, *Fénix*, 11.

<sup>&</sup>lt;sup>167</sup> Buendía, *Fénix*, 11-12.

<sup>&</sup>lt;sup>168</sup> Amanda Respess, photograph of a wall plaque at Phoenix Mosque, author's own collection, 2018.

prayer hall represents its body, with its unique three-domed roof, symbolizing its back and wings. In 1928, the "head" of the phoenix, the moon viewing tower and arched front gate, were demolished in a road construction project, leaving the front of the prayer hall as the entrance to the complex. The beheaded mosque was made whole again in 2009, with its restoration based on photography and images of the destroyed elements of the building. The new restoration seems to have shrunk the original size of the complex somewhat, but the Phoenix mosque is once again in possession of its complete form. <sup>169</sup> It is easy to imagine looking down with awe on the outspread wings of the original phoenix form from the surrounding hills before the neighboring buildings obscured the view. The compound became an unmistakable symbol of the Persian community in Khinsai, and the hybrid creature from which it took its form an emblem of the merchants coming and going from Chinese shores. A stele on the grounds proclaims, "the people and literati of the clans and families of this religion came in numbers, like phoenixes or *qilin*" <sup>170,171</sup>

The anatomical symbolism of the body of the bird standing in for the body of the *umma*, <sup>172</sup> or community, resonates through multiple layers of Persianate medicine, material culture, and literature. By the end of the Middle Period, sinicized phoenix or *simorgh* imagery had become an omnipresent element of Persian design. Terrifying and wondrous birds like the 'anqā', rokh<sup>173</sup>, and *simorgh* populated transregional mythologies and navigational stories about the edge of the world. <sup>174</sup> Locating the *simorgh* in China, the easternmost frontier of Islam, 'Aṭṭār writes:

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<sup>&</sup>lt;sup>169</sup> Lane, 49.

<sup>170</sup> A Chinese mythical chimera, 麒麟.

<sup>&</sup>lt;sup>171</sup> Lane, 233, stele 2.

<sup>172</sup> أمة

<sup>÷ , 173</sup> 

<sup>174</sup> Buendía, *Fénix*,13.

It was in China, late one moonless night,

The Simorgh first appeared to mortal sight –

He let a feather float down through the air,

And rumours of its fame spread everywhere.

Throughout the world men separately conceived

An image of its shape, and all believed

Their private fantasies uniquely true!

(In China still this feather is on view,

whence comes the saying you have heard, no doubt,

"Seek knowledge, unto China, seek it out.")<sup>175</sup>

The *simorgh* was similarly identified as an inhabitant of foreign lands in Ferdowsī's *Shahnāme*. Sometimes benevolent and sometimes fearsome, the hybrid bird creatures associated with the 'anqā' and simorgh played recognizable roles on the periphery of the known world. In Zoroastrian cosmology, the simorgh lived in a great tree in the middle of a cosmic ocean, the branches of which were the source of all the world's healing plants. The movement of the simorgh's wings caused all healing medicines to scatter and be distributed by the wind, the rain, the tides, and by the lesser species of birds. The symbolic likeness to migratory merchants coming and going from the Far East with the monsoons, bearing spices and medicines across the trade routes, is striking. Likewise, the simorgh of the Shahnāme rescued and nursed Persia's

<sup>&</sup>lt;sup>175</sup> Farīd al-Dīn ʿAṭṭār, *The Conference of the Birds*, trans. Afkham Darbandi and Dick Davis. (London: Penguin, 1984), 34.

<sup>&</sup>lt;sup>176</sup> Rashn Yasht 12.17, trans. James Darmesteter, Sacred Books of the East Volume 23, Friedrich Max Müller, ed. (Oxford: Clarendon, 1882, 1898), <a href="http://www.avesta.org/ka/yt12sbe.htm">http://www.avesta.org/ka/yt12sbe.htm</a>.; Hanns-Peter Schmidt," SIMORĞ," Encyclopedia Iranica, online edition, 2002, <a href="http://www.iranicaonline.org/articles/simorg">http://www.iranicaonline.org/articles/simorg</a>.

abandoned and exiled heroes, providing its own feathers as incense (again, a trade commodity) to be burned under dire circumstances as a summons for healing or rescue. The *simorgh* was summoned with this fiery smoke to serve as a midwife by the parents of the *Shahnāme*'s greatest hero, Rostam, and instructed his parents in the technique of cesarean section when labor was obstructed. The *simorgh* saved the savior of the Persian world. In the merchant community in China, it was something of a patron saint.

Though the earliest records of the Phoenix Mosque's construction have not survived the pyres of its successive rebirths, the oldest stele remaining on the grounds that describes its origins<sup>177</sup> references the line of Persian sacred kings immortalized in the *Shahnāme*, and their hero, Rostam.<sup>178</sup> The *simorgh* had been, prior to the Arab invasion of Iran, a symbol associated with the pre-Islamic Sassanid Empire. Many Zoroastrians, including members of the Sassanid royal family, fled the Arab conquest for refuge in China, as did Alids under eighth-century Umayyad rule.<sup>179</sup> In the twelfth-century work of 'Aṭṭār, the *simorgh* was reasserted as a symbol of both a just and rightful king and the ultimate source of authoritative spiritual knowledge.

The wells on the north and south sides of the Phoenix Mosque have provided the *umma* with the water to fulfill the *masjid*'s needs for many centuries and are now marked with the small seal

<sup>&</sup>lt;sup>177</sup> Created under the Ming in 1452.

<sup>&</sup>lt;sup>178</sup> Agnes Smith Lewis, trans. EG Browne, *An Inscription Recording the Restoration of a Mosque at Hangchow in China, AD 1452.* (Cambridge: Cambridge University Press, 1911), https://babel.hathitrust.org/cgi/pt?id=coo1.ark:/13960/t3dz0t632;view=1up;seq=10.; Lane, *PMPMH*, 38.

<sup>&</sup>lt;sup>179</sup> Matteo Compereti, "The Last Sasanians in China," *Eurasian Studies* 2, no. 2(2003):197-213,198; Reference to Zaidis in China from Muhammad Aufi's *Jami u'l-Hikayat*, trans by Schaefer in Marshall Broomhall, *Islam in China: A Neglected Problem*. London: Morgan & Scott, (1910): 20-21.

script character,  $\buildrel g \buildrel i$  (ancient). They represent the two eyes of the phoenix, which is particularly meaningful in poetic wordplay in Persian. The Persian word for fountain or wellspring is *cheshmeh*,  $^{181}$  and the word for eyes is *cheshm*. Not only does *cheshmeh* literally describe a source for water, it also shares with *cheshm* (which could also produce water through tears) the idea of being an agentive source, not just a passive receptacle. Eyes, in early medieval Persian medicine, were viewed as sources of vision through the production of beams that were emitted by the body, until polymath al-Haytham proposed an alternate arrangement in the eleventh century. Eyes carried the meanings of both hope and of danger, the wrong person's eyes could direct misfortune and bring disease.

In a sympathetic association, the eye of a bustard bird was used as an amulet to avert the evil eye, thought to be a major cause of disease and misfortune, and its talon allowed the bearer to tightly grasp love and affection. As commodities, birds were used in medieval Iranian medicine in various forms and parts of their bodies were valuable commodities. 185

<sup>180</sup> 古

<sup>181</sup> چشمه

<sup>182</sup> چشم

Peter Adamson, "Vision, Light, and Color in al-Kindi, Ptolemy, and the Ancient Commentators," *Arabic Sciences and Philosophy* 16, no. 2 (2006):207.

<sup>&</sup>lt;sup>184</sup> Dāʾūd Anṭākī, *Tadkerat ūliʾl--albāb waʾl-jāmeʿ leʾl-ʿajab al-ʿojāb, 2 vols.* (Cairo, 1308/1890-91), 100, cited in Hūšang Aʿlam and Derek A. Scott, "BUSTARD," *Encyclopedia Iranica* IV, Fasc. 6 (1990), 575-577.

<sup>&</sup>lt;sup>185</sup> A'lam and Scott, *BUSTARD*,:575-577; Sahmardan in Hūšang A'lam, "CRANE," *Encyclopedia Iranica* VI, Fasc. 4 (1993),398; al-Kindi *The Medical Formulary or, Aqrabadhin of Al-Kindi.* (Madison: University of Wisconsin Press,1966),44.; M Khaleghi Ghadiri and A Gorji, "*Natural Remedies for Impotence in Medieval Persia*," International Journal of Impotence Research 16 (2004):80–83.

<sup>;</sup> A Gorgi and M Khaleghi Ghaderi, History of Epilepsy in Medieval Iranian Medicine. *Journal of Ethnopharmacology* 25 (2001):455-461, 458.

Edible bird's nests made from the saliva of swiftlets have been a part of Chinese healing and maritime commerce since at least the Tang Dynasty. <sup>186</sup> Harvested from the walls of limestone caves found in Southeast Asia, primarily in Indonesia and Malaysia, these nests, called *yànwō*, were brought to China by Arab and Persian merchants and sold as medicinal ingredients. <sup>187</sup> According to Eberhard, a Chinese legend held that swiftlets lived all the days of winter immersed beneath the waves of the ocean, waiting out their exile underwater in a transformed state as seacreatures. At the first sign of spring they would return and burst forth again into birds. <sup>188</sup> They were believed to be so powerful they not only brought good luck, marriage, felicity, and children to whoever's home they visited, but they possessed the power to build city walls, repair violated graves, and make whole again the fallen statues of deities. <sup>189</sup>

The numinous power of birds and bird products described above parallels the sometimes threatening powers attributed to Persian and Arab merchants in Chinese sources. Zhao Rugua, a thirteenth-century harbormaster at Quanzhou, records the trade of kingfisher feathers and parrots at his port and describes the supernatural and sometimes frightening power of birds along the sea routes leading to China. He warns potential Chinese seafarers of an abundance of sorcerers associated with foreign birds inhabiting coastal lands controlled by Persian and Arab traders (*Dashi*), who turn, from time to time, into human-birds and other magical creatures. He writes

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<sup>&</sup>lt;sup>186</sup> M.F. Marcone, "Characterization of the Edible Bird's Nest the "Caviar of the East"," *Food Research International* 38, no.10 (2005):1125–1134.

<sup>&</sup>lt;sup>187</sup> Ma Fucui and Liu Daicheng, "Sketch of the Edible Bird's Nest and its Important Bioactivities." *Food Research International* 48 (2012):559–567.

<sup>&</sup>lt;sup>188</sup> Wolfram Eberhard, A Dictionary of Chinese Symbols. (London: Routledge, 1983), 280.

<sup>189</sup> Eberhard, Dictionary, 280.

<sup>&</sup>lt;sup>190</sup> Zhao Rugua, *Zhufan Zhi. Chau Ju-Kua: His Work on the Chinese and Arab Trade in the Twelfth and Thirteenth Centuries, entitled Chu-Fan-Chi.* Friedrich Hirth and William Woodville Rockhill, trans. (Hong Kong: Forgotten Books, 2012 [1911][circa 1225]),131,235-236.

that in *Chung-li*, (the *Dashi* Somali coast), "if some of them in trading with some foreign ship have a quarrel, the sorcerer's pronounce a charm over the ship so it can neither go forward nor backward, and they only release the ship when they have settled the dispute." The birds and the merchants have otherworldly power, and they disappear as quickly as they appear, in close association. Zhao writes that "every year countless numbers of birds of passage alight" in these lands, but "when the sun rises, they suddenly disappear, so that one cannot find a trace of them" 192

As travelers between states and locations, birds also acted as trusted messengers and guides for those at sea. Navigational texts like those by Ibn Mājid and al-Mahri described the careful observation of birds as an essential skill required of seafarers. <sup>193</sup> In the same way that knowledge of the stars safeguarded their navigational trajectories, the ability to recognize patterns in the changing composition of species from place to place and shifts in the behavior of birds oriented navigators to their own changing positions at sea.

In 'Aṭṭār's Sufi masterwork, the *Manṭiq al-Ṭayr*, or *Conference of Birds*, a travelling band of birds undertakes a metamorphic, eastward journey in pursuit of the *simorgh*. In one of the most important images in Persian literature, 'Aṭṭār's birds experience a total transformation, merging at times into the water of the ocean they are crossing and finally transmogrifying into beams of light. This transformation represents a state of category disruption known in Islamic mysticism

<sup>&</sup>lt;sup>191</sup> Zhao, *Zhufan Zhi*,131.

<sup>&</sup>lt;sup>192</sup> Zhao, *Zhufan Zhi*,131.

<sup>&</sup>lt;sup>193</sup> Hassan S Khalilieh and Areen Boulos, "A Glimpse on the Uses of Seaweeds in Islamic Science and Daily Life During the Classical Period," *Arabic Sciences and Philosophy* 16 (2006):91-101, 98.

The social metaphor of the *simorgh*'s body, the human-faced chimera of the *'anqā'* of hadith, and the human-populated, anatomical-architectural footprint of the Phoenix Mosque in the *Fènghuáng* hills all point towards a hybridity and chimerism of the social body that are analytically useful in the "inbetween" spaces of port cities and maritime routes. Postcolonial theorist Homi Bhabha's articulation of "interstitial" sites such as the trade routes as "third spaces," or creative zones of "translation and construction of "of new meanings between boundaries, is a useful framework to understand hybridity as cultural practice. The political dimensions of third spaces in the distant past require vastly different analytics than modern hybridities, but the mechanisms of hybrid cultural production described by Bhabha have been applied to material culture by archaeologists who must reckon with physical objects that clearly

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<sup>&</sup>lt;sup>195</sup> Homi K. Bhabha, *Location of Culture*. (New York: Routledge,1994), 2.

<sup>&</sup>lt;sup>196</sup> Magdalena Naum, "Re-emerging Frontiers: Postcolonial Theory and Historical Archaeology of the Borderlands," *Journal of Archaeological Method and Theory* 17, no. 2 (2010):101-131,106.

197 Bhabha. *Location*. 296.

bear the stamp of cultural sharing and improvisation. 198 According to Rowe and Schelling, hybridization in material culture refers to "the ways in which forms become separated from existing practices and recombine with new forms in new practices." 199 For example, a number of Chinese *qingbai* and Cizhou-styled ceramic ewers recovered from the twelfth-century Java Sea Shipwreck off the coast of Indonesia have strap handles mimicking Middle Eastern and Central Asian metal ewers. 200 Chinese ceramics from the ninth-century Belitung wreck, also recovered in Indonesian waters, include incised, Near Eastern lozenge motifs and designs painted in imported Persian cobalt blue. 201 Forms, techniques, and technologies from different locations combine on the road into new combinations. A previous study of artifacts from the Java Sea Shipwreck by the author and Lisa C. Niziolek observes that "new, shared practices can emerge through the creation of hybrid objects such as those combining East Asian and Middle Eastern elements. Such objects can give rise to new forms of identity and associations." 202

The use of hybridity as an analytical framework in the social sciences has been criticized "for being based upon" and reifying "a sense of purity" of cultures that are imagined to interact as distinct systems.<sup>203</sup> Hodos writes that this concept of a "cultural group" or "culture" as a closed

 $<sup>^{198}</sup>$  It is also worth noting that historians have to decolonize our biases about the premodern.

<sup>&</sup>lt;sup>199</sup> William Rowe and Vivian Schelling Rowe, *Memory and Modernity: Popular Culture in Latin America*. (London: Verso, 1991), 231.

<sup>&</sup>lt;sup>200</sup> Basil Gray, "The Influence of Near Eastern Metalwork on Chinese Ceramics," *Transactions of the Oriental Ceramic Society* xviii (1940/41): 47-60; Lisa C. Niziolek and Amanda Respess, "Globalization in Southeast Asia's Early Age of Commerce: Evidence from the Thirteenth Century CE *Java Sea Shipwreck*," in *The Routledge Handbook of Archaeology and Globalization* (London: Routledge, 2017),797.

<sup>&</sup>lt;sup>201</sup> Regina Krahl, John Guy, J. Keith Wilson, and Julian Raby, eds. 2010 *Shipwrecked: Tang Treasures and Monsoon Winds*. Washington, D.C.: Smithsonian.

<sup>&</sup>lt;sup>202</sup> Niziolek and Respess, *Globalization*, 797.

<sup>&</sup>lt;sup>203</sup> Tamar Hodos, "Globalization: Some Basics," in *The Routledge Handbook of Archaeology and Globalization*, Tamar Hodos, ed. (London: Routledge, 2017), 3-11.

or "essentially bounded" entity "assumes that culture derives from a localized, contextualized learning process" that ignores "the historical depth that makes up cultures and the features by which we identify, categorize, and distinguish them."<sup>204</sup> Histories of connectivity, contact, and exchange act as a foil to illusions of bounded cultural systems and identities, and material hybridities found in artifacts reveal a deeply interconnected premodern world. The materials recovered from the Belitung shipwreck demonstrate the depth and breadth of those connections for China's early Muslim merchant communities.

## **Mixed Cargo**

The ninth-century Belitung shipwreck sank off the coast of an Indonesian island on its return trip home to the Persian Gulf after leaving China. It set sail during the earliest incarnation of the Phoenix Mosque in the Tang Dynasty and is believed to have first arrived in Guangzhou, then made its way north to Yangzhou via Hangzhou (Khinsai) and the Grand Canal. Like the mosque, the recovered ship showed signs of multiple repairs. Lingering traces of its original construction and mending were recovered in surviving hull wood and organic rope. The lashed, sewn method of construction and use of African wood (*Afzelia africana*) strongly point towards it being a Middle Eastern-made vessel, and the organic materials used in the repairs came from India and Southeast Asia. 207

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<sup>&</sup>lt;sup>204</sup> Hodos, *Globalization*, 5.

 $<sup>^{205}</sup>$  Alan Chong and Stephen Murphy, eds. *The Tang Shipwreck*. (Singapore: Asian Civilizations Museum, 2017), 23.

<sup>&</sup>lt;sup>206</sup> Teak, rosewood, juniper, and palm were also used, Vosmer in Krahl et al, Shipwrecked, 123.

<sup>&</sup>lt;sup>207</sup> Flecker in Krahl et al. Shipwrecked; Chong and Murphy, Tang Shipwreck, 22.

The ship's bumps and bruises tell a life story of a vessel constituted by connectivity, methods from one region fused, originally, with materials from another, bandaged by repairs from multiple long-distance ports.<sup>208</sup> The cargo, itself, was also mixed and a composite of trade objects from China and the Middle East. Over 55,000 Changsha bowls with unique motifs comprise the largest assemblage of late Tang ceramics ever recovered.<sup>209</sup> The cargo also included gold and silver metalwares, multiple storage jars of intact spices, writing equipment, Persian ceramics, Chinese mirrors, tea accessories, and Islamic glass.<sup>210</sup>

The ceramics cargo of the Belitung wreck has vexed scholars around the world since it was recovered in 1998. The majority of the objects were made at the Changsha kilns in Hunan, and seem to have made their way to the Tang harbor at Yangzhou, and onward to Hangzhou via the Grand Canal. The majority of the bowls were each covered in slip, the edges then dipped in brown glaze to create a frame for the central decoration which was painted on in iron- and copper-oxide brown, green, and sometimes red pigments, then glazed and fired. A smaller number were glazed before color was added and then glazed over, creating "colorful effects" when fired, while even fewer were merely covered in slip, decorated with color, and left unglazed. Many, but not all, of the bowls have a slight green tinge in the overglaze that was very popular in China in the late-Tang period for enhancing the experience of drinking powdered

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 $<sup>^{208}</sup>$  Stephen Murphy, (Presentation,The Field Museum of Natural History, Chicago, Illinois), March 19, 2019.

<sup>&</sup>lt;sup>209</sup> John Guy in Krahl et al, 58.

<sup>&</sup>lt;sup>210</sup> Chong and Murphy, Tang Shipwreck.

<sup>&</sup>lt;sup>211</sup> Krahl et al, Shipwrecked, 56.

<sup>&</sup>lt;sup>212</sup> Krahl et al, Shipwrecked, 56; Liu Yang in Krahl et al, Shipwrecked, 150.

<sup>&</sup>lt;sup>213</sup> Ibid.

green tea.<sup>214</sup> The vast majority of the decorations on the bowls, however, make clear that their intended audience was in the Abbasid Persian Gulf.

Roughly a century before the bowls were made, in the year 760, thousands of Persian and Arab merchants were slaughtered in the cosmopolitan city of Yangzhou during the An Lushan rebellion (755-763). During the years of the rebellion, many people fled south to more peaceful areas, including the region around Changsha. Liu argues that these settlers and refugees transferred their business interests and ceramics skills to the Changsha kilns, and set the stage for Changsha's booming international export trade. <sup>215</sup> Krahl also argues for an unusually "direct connection from the [foreign] merchants to the kilns" in Changsha, <sup>216</sup> and a close analysis of the bowls seems to support this view.

The design motifs and inscriptions on the surface of the cargo's bowls should occupy the next several generations of scholars, not only because of their enormous number, but because they have defied consistent interpretation. Their meanings have, so far, been limited to the eye of the beholder. Liu has identified several subgroupings of painted motifs, including "vapor or cloud scrolling," "foliage and flowers," "animistic ornaments," "landscapes," "Buddhist motifs," Chinese "poems and phrases," and "foreign figures." Although bowls from each of these categories are relevant to understanding hybrid cultural production along the trade routes, what Liu identifies as "landscape" paintings will occupy our primary attention. In these "landscapes,"

<sup>&</sup>lt;sup>214</sup> Liu Yang in Krahl et al, Shipwrecked,145.

<sup>&</sup>lt;sup>215</sup> Ibid.

<sup>&</sup>lt;sup>216</sup> Krahl et al, *Shipwrecked*, 52

<sup>&</sup>lt;sup>217</sup> Liu in Krahl et al, *Shipwrecked*,151.

Liu sees mountains.<sup>218</sup> The Asian Civilization Museum in Singapore, where artifacts from the shipwreck are permanently displayed, has taken his cue in their labelling. Other Chinese art scholars and archaeologists<sup>219</sup> see Persian, Arabic, and Pseudo-Perso-Arabic script. Liu Yang has published his opinion on the paintings in the Smithsonian's exhibition catalog, *Shipwrecked*, writing, "some Chinese scholars have mistakenly interpreted them as Arabic inscriptions," naming the Hunan Provincial Institute of Archaeology and Cultural Relics, Li Xiaowei, Li Huibeng, and Liu Meiguan as particular offenders.<sup>220</sup>

Liu writes that the bowls are painted within the Chinese cultural perception of "mountains as the visible embodiment of natural forces," which produce clouds and vapor (yúnqì).<sup>221</sup> He writes:

"the mountains sometimes are painted as separate clods of earth set up straight beside one another and bring to mind the schematized versions of landscape that can be traced to the fourth century. Other compositions are free configurations of natural forms; the rest are purely fanciful creations, which constitute by far the largest part of the landscape repertoire.

Changsha artisans were not the first to be inspired by the mountain motif, but they seem to have been more interested in abstract mountains than their predecessors. In these stylized landscape compositions, the mountain contours were brushed in quick, decisive touches. The artisans worked only in outline: no texture strokes, graded ink washes, or

<sup>&</sup>lt;sup>218</sup> Liu in Krahl et al, *Shipwrecked*,154.

<sup>&</sup>lt;sup>219</sup> See John Miksic, "central motif of pseudo-Arabic" caption for object SLM R2 BB S2 04-00-1-1095 in *Southeast Asian Ceramics*. (Singapore: Editions Didier Millet, 2009), 73.

<sup>&</sup>lt;sup>220</sup> "Hunansheng Wenwu Kaogu Yanjiusuo et al., *Changsha Kilns*, captions of pls. 87, 172. Many researchers have followed suit; see Li Xiaowei, *Changsha Kilns*, pp. 2, 49-55, figs. 83, 86, 89-91; Li Huibeng, *Changsha Kilns*, vol. 2, pls. 162-63, 200-1; Liu, *Interpretation of Changsha Ware*, p. 29." (Liu Yang 2010:155, 275)

<sup>&</sup>lt;sup>221</sup> 云气, Liu in Krahl et al, *Shipwrecked*, 155.

recessions into depth were depicted. The principal pattern was a mountain range rising and falling in the distance, featuring a central towering peak flanked by smaller ones.

Vapor or clouds gathered around the mountain peaks, half camouflaged below by mists in the form of stylized scrolls."<sup>222</sup>

Figures 1-5 (Changsha bowls from the Belitung Wreck, images courtesy of the Asian Civilizations Museum) depict ceramics recovered from the wreck. Figure 6, (Water jar excavated from Yangzhou grave, shows the back and front sides. Eighth or ninth century. From Changsha yao, Beijing: Zijincheng Chubanshe, 1996, Plate 87) is from the Hunan Provincial Institute of Archaeology and Cultural Relics and shows an excavated grave object with related designs. This burial would have occurred during the timeframe of the Yangzhou massacre of the Muslim community, or slightly after, so the presence of the funerary jar is especially poignant. The images are captioned with a description of the underglaze brown and green Arabic design motifs, with the design on the front resembling "an inaccurate rendition of "Allah Akbar" (God is great), suggesting it was written by someone with poor Arabic skills."223 The jar is given a provenance from the Changsha kilns. Figure 7 (Broken tenth- or eleventh- century bowl with design. From Changsha yao, Beijing: Zijincheng Chubanshe, 1996, Plate 170) is another Changsha bowl image from the Hunan Institute, but dated after the other objects. The caption identifies the underglaze green Arabic motif as "a calligraphic representation of a human face, here with a mirrored "Allah" for nose and eyes, and perhaps an upside down "Muhammad" for the mouth.

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<sup>&</sup>lt;sup>222</sup> Liu in Krahl et al, *Shipwrecked*, 154.

<sup>&</sup>lt;sup>223</sup> From *Changsha yao (Changsha Kilns*), (Beijing: Zijincheng Chubanshe, 1996), Plate 87. Trans, Anthony Garnaut 2006 The Islamic Heritage in China. China Heritage Newsletter 5, March. Accessed online: http://www.chinaheritagequarterly.org/editorial.php?issue=005

The positioning of this motif on the inside of the bowl suggests a discrete blessing of its contents."<sup>224</sup>

I propose, here, new ways of understanding the provocative, evocative illegibility of the majority of the bowls. Though other designs on the Belitung bowls are clearly legible as Arabic and Persian words including Muhammad and Hassan, the vast majority are written in ways that, initially, obscure their meaning. First, as seen in the excavated Islamic jar above, these objects were created in the aftermath of a profound rupture in the safety of the Persian merchant community in Hangzhou and its Grand Canal neighbor, Yangzhou. The similarity of the design from the grave jar and the Belitung bowls is unmistakable. The Persian community of Yangzhou and Hangzhou in the Tang period had been prosperous and well-established, and when things went south, many prosperous, well-connected people did, too. The migration to Changsha occurred at a historical moment when life was lucrative and dangerous for Persian traders, and the bulk of their ceramics business was in long-distance exports that needed to appeal to the foreign market. Creating designs that appealed to Abbasid tastes while camouflaging overt cultural differences within China may have been in the Changsha Persian community's best interests. It is possible that the legibility of the designs was crafted in such a way to resonate with literate Arabic and Persian speakers as an artful "hidden transcript" while also remaining evocative and safe for a Chinese audience of port officials.

Accessed online: http://www.chinaheritagequarterly.org/editorial.php?issue=005

<sup>&</sup>lt;sup>224</sup> From *Changsha yao*, (Beijing: Zijincheng Chubanshe, 1996), Plate 170. Anthony Garnaut, trans. 2006 The Islamic Heritage in China. China Heritage Newsletter 5, March.

<sup>&</sup>lt;sup>225</sup> See James Scott, *Domination and the Arts of Resistance: Hidden Transcripts*. (New Haven: Yale University Press, 1990).

A less ominous way to understand the Belitung bowls is in the context of the development of the \$\sin\tilde{t}\tilde{n}\tilde{t}\$ (Chinese)^{226} style of Persian and Arabic calligraphy. Architectural, textual, and archaeological examples of Arabic and Persian writing in China include early examples of Kufic script, but increasingly abundant uses of *Thuluth* calligraphy over time. 227 The writing cultures of China and the Islamicate world had influenced each other and been in conversation since the Tang Dynasty, when Chinese paper-making technology was transmitted to the Abbasids. The change in writing surfaces influenced the development of more rounded and fluid scripts like *Thuluth* and *Nasta'līq*. 228 Even though Chinese calligraphy is traditionally done with a brush and Arabic and Persian calligraphy with a reed, both literary cultures added similar botanical and medicinal ingredients to their recipes for ink, and these ingredients were transported through the maritime trade. 229 The cargo of the Belitung wreck contained *shuizhu* (water droppers) and *shuiyu* (water pots) for use in preparing ink for Chinese calligraphy. That these objects were on a vessel that had set sail for the Abbasid Persian Gulf is significant for understanding the exchange of writing technologies between China and Iran. 230

It has been proposed that it was in the Ming Dynasty that Perso-Arabic scripts developed in China, but it is hard to make sense of pre-Ming shipwrecked ceramic inscriptions without

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<sup>&</sup>lt;sup>227</sup> "Islamic Calligraphy in China," *China Heritage Newsletter 5*, 2006. Accessed online: <a href="http://www.chinaheritagequarterly.org/features.php?searchterm=005">http://www.chinaheritagequarterly.org/features.php?searchterm=005</a> calligraphy.inc&issue=005; Quanzhou and Hangzhou tombstone inscriptions

<sup>&</sup>lt;sup>228</sup> China Heritage Newsletter 5, 2006.

<sup>&</sup>lt;sup>229</sup> China Heritage Newsletter 5 (CHN 5), 2006, *Bencao Gangmu*, *Zhufan Zhi* 

<sup>&</sup>lt;sup>230</sup> Liu in Krahl et al, *Shipwrecked*, 150; Flecker in Chong and Murphy, *Tang Shipwreck*, 24.

imagining an earlier date.<sup>231</sup> The "mountain" peaks in Liu's "landscape" designs mimic the height ratios in *Thuluth* calligraphy,<sup>232</sup> and seem to replicate the mirroring of the Yangzhou "Allah" inscription (Figure 7). Symmetrical mirroring eventually developed into a recognizable tradition in Arabic calligraphy, and the Yangzhou and Belitung examples seem to be antecedents. When Liu writes that "the mountain contours were brushed in quick, decisive touches," that are calligraphic, that is because they *are* calligraphic.<sup>233</sup> He points out that the images are unusual for landscape designs, that "the artisans worked only in outline: no texture strokes, graded ink washes, or recessions into depth were depicted. The principal pattern was a mountain range rising and falling in the distance, featuring a central towering peak flanked by smaller ones."<sup>234</sup>

Garnaut writes that in the Islamicate world, Arabic calligraphy is "most readily distinguished by the flowing tails of its letters, [whereas] Chinese characters are neatly contained within a square form."<sup>235</sup> They continue,

"another common form of *Sini* calligraphy is rectangular, with one of the names of God or the Prophet wrapped around an extended vertical stroke such as the alif<sup>236</sup> or "a" of the phrase Ya Mustafa (O Chosen One!). Alif is used as an architectonic device in much Arabic calligraphy. This form can be compared to popular Chinese calligraphic

<sup>231</sup> Garnaut, CHN 5, 2006.

<sup>&</sup>lt;sup>232</sup> Garnaut, 2006.

<sup>&</sup>lt;sup>233</sup> Liu in Krahl et al, *Shipwrecked*, 154, 151.

<sup>&</sup>lt;sup>234</sup> Liu in Krahl et al, *Shipwrecked*, 154.

<sup>&</sup>lt;sup>235</sup> Garnaut, 2006.

<sup>1236</sup> 

representations of the characters for dragon, tiger and longevity, which also employ a single vertical stroke."<sup>237</sup>

Over time, the symmetry and balance of Arabic and Persian calligraphy in China shifted into a more symmetrical, sometimes boxed form, in imitation of Chinese calligraphic norms. 238

Mirror-image calligraphy, which much later became prominent in mystical communities in the Islamicate world, is common in \$\int\_{\int}\bar{n}\bar{v}\$ works and creates just such a symmetry. 239 \$\int\_{\int}\bar{v}\$ calligraphy also often forms words into images of animals or boats, combining the lexical content of the word's meaning with a visual depiction of a related shape created through creative arrangement of the letters. This practice combines the dexterity of Islamicate calligraphy traditions with the framework of Chinese pictograms. Many of the Belitung bowls whose animal and nature scenes have not been identified with writing seem to be playing with this method, including the shapes of Arabic letters in and around the shapes of creatures, flowers, and clouds. In so doing, the natural world appears redolent with the Word.

Persians in China may have seen the designs on the Belitung bowls with what Bhabha calls "the migrant's double vision," a creative praxis formed in the "poetics of exile" as a diaspora. Though the bowls are vexing for modern art and museum taxonomists, the confounding nature of their designs may be a starting point, not the end, of their interpretation. Describing this generative nature of hybridity, Bhabha writes, "it is in this sense that the boundary becomes the place from

<sup>&</sup>lt;sup>237</sup> CHC 5, 2006.

<sup>&</sup>lt;sup>238</sup> CHC 5, 2006.

<sup>&</sup>lt;sup>239</sup> Library of Congress, *Mirror image of 'Ali wali Allah.* http://memory.loc.gov/cgibin/query/h?intldl/ascsbib:@field(DOCID+@lit(ascs000006)

which something begins," rather than ends, comparing endpoints to "the nest of the phoenix, not its pyre." <sup>240</sup>

Because the bowls were made, primarily, for a Persian Gulf audience, it is also helpful to include the general context of other Abbasid ceramics and tastes in their interpretation. So-called "pseudo-Arabic" or "pseudo-script" occured on other Abbasid objects, even those produced within overtly-Arabic and Persian speaking areas, including Iraq.<sup>241</sup> The assumption by many scholars that the Changsha examples must have been produced by workers with no knowledge of Arabic or Persian who were just making fast, careless copies, does not, therefore, seem completely reasonable. Especially because within the motif groupings of Belitung bowls there are often numerous examples of skilled lettering. A few inscriptions jump off the bowl in their clarity and penmanship, and are clearly produced by literate and skilled artisans. These may be holotypes meant for copying by others, but they often also include elements that provoke wonder. Saba has asserted that artistic tastes in the Abbasid realm demanded wonder, that the sense of one's eye being confounded enhanced the enjoyment of art and granted it spiritual merit.<sup>242</sup> He writes that these objects "fulfilled a specific expectation that people in Abbasid Iraq had for works of craft, namely that a person should experience pleasurable wonder, expressed by the Arabic term 'ajab, 243 when viewing such objects."244 He explains that "the choice and combination of decorative motifs" in a successful object "serve to obscure the viewer's ability to

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<sup>&</sup>lt;sup>240</sup> Bhabha, *Location*, 25.

<sup>&</sup>lt;sup>241</sup> Matthew D. Saba, "Abbasid Lustreware and the Aesthetics of 'Ajab," *Muqarnas* 29 (2012):187-212, 204.

<sup>&</sup>lt;sup>242</sup> Saba, *Abbasid*, 189.

<sup>243</sup> عدب

<sup>&</sup>lt;sup>244</sup> Saba, *Abbasid*, 189.

read the designs," and decorative elements intentionally "complicate the experience of reading the surface," sometimes "by creating a sense of motion."<sup>245</sup> The mirror-images, visual echoes, "pseudo-script" and free-flowing wild cursive<sup>246</sup> painting style used on the Belitung bowls clearly speak to these appetites. The bowls are not failed Chinese or faked Persian and Arabic designs, but, to an Abbasid eye, a successful merging of both visual styles. The "landscape" bowls can be viewed as both religious inscriptions and abstract mountains, they are both/and.

A useful way of thinking about the hybridity of the Belitung bowls is through the semiotics of language. Bhabha asserts that hybrid spaces enable "the discursive conditions of enunciation that ensure that the meaning and symbols of culture have no primordial unity or fixity; that even the same signs can be appropriated, translated, rehistoricized and read anew."<sup>247</sup> The "split-space of enunciation,"<sup>248</sup> linguistically, is the generative frame within which discursive acts occur. Linguistic meanings are produced not simply through a transfer of fixed, symbolized content through neutral space into the empty, receiving mind of a blank slate, but always through a relational process *between* symbols, speakers, and listeners. Meaning is relational, and the context of a speech act is a profound determinant of its meaning. <sup>249</sup> How does this apply to the bowls? Linguistic anthropologist Laura Ahearn writes that meaning is "inextricably embedded in networks of sociocultural relations" <sup>250</sup> and that language can't be understood outside of these networks of meaning. Citing the work of Reddy and Goodwin, Ahearn argues that language

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<sup>&</sup>lt;sup>245</sup> Saba, *Abbasid*, 189.

<sup>&</sup>lt;sup>246</sup> Liu in Krahl et al, *Shipwrecked*, 151.

<sup>&</sup>lt;sup>247</sup> Bhabha

<sup>&</sup>lt;sup>248</sup> Bhabha

<sup>&</sup>lt;sup>249</sup> Ahearn 111-112

<sup>&</sup>lt;sup>250</sup> Ahearn Language and Agency 110

cannot be properly understood if it is envisioned merely as a "conduit" or "transparent vehicle carrying only referential meaning." She writes, "we have to set aside this vehicular metaphor—unless, that is, we say linguistic anthropologists view language as a vehicle that people themselves are continually in the process of building together." In this view, linguistic meaning is a vehicle in motion, under construction while it tumbles down the road or floats on the sea, a sewn-together Belitung wreck made of composite parts and by multiple hands.

A final way of understanding the illegibility of the Belitung ceramics is in comparison to pseudoscripts and invocations belonging specifically to medical, or magic bowls, produced in the Near East. Ceramic, and later metal, bowls inscribed with misspelled, scribbled, and illegible Aramaic, Arabic, and Persian were used to repel demons and attract divine blessings. A University of Michigan museum label reads, "this type of magic bowl was used for healing purposes and/or divination. When filled, the vessel was believed to transfer the power of the word into the liquid, which then was consumed by a patient or customer to cure various ailments or discern the future." <sup>253</sup> Legible religious inscriptions, medical instructions, and spiritual symbols also appear on magic bowls, in many configurations. <sup>254</sup> Traditionally, Western scholars have argued that illegible bowls were a function of charlatanry of illiteracy on the part of their manufacturers. More recent scholarship has questioned this assumption and offered alternate interpretations which may also hold true for the Belitung ceramics. Waller characterizes the "ostentatious displays of non-writing" and "manipulations of graphic signs" that often occur on magic bowls

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<sup>&</sup>lt;sup>251</sup> Ahearn 111

<sup>&</sup>lt;sup>252</sup> Ahearn 111

<sup>&</sup>lt;sup>253</sup> Pearls of Wisdom: The Arts of Islam at the University of Michigan, Magic Bowl with Attached Prayer Tablets, https://exhibitions.kelsey.lsa.umich.edu/pearls/objects/bowl2.html.

<sup>&</sup>lt;sup>254</sup> Emile Savage-Smith, ed. *Magic and Divinition in Early Islam*. (London: Ashgate, 2004), 76.

as "inscriptional practices" that reveal alternative "conceptions of writing" in the late antique and medieval world. He argues that magic bowls with "imitation scripts that closely resemble the forms of known alphabets" and "encode various visual strategies into "text"" represent overlapping domains of "written, oral, and memorial processes. He argues that pseudo-script represents "the instrumentalization of writing and inscription as magical technologies," and that "the much-neglected pseudo-script bowls provide a valuable window onto processes of writing as a means of engaging with—inscribing, ordering, and manipulating—transmundane powers." Savage-Smith has identified magic bowls with "faux" or "pseudo" Arabic manufactured in China for export to Muslim markets during the Qing period, but seen in context with the Belitung bowls, these may not represent incompetence, but continuity of tradition. 258

## Mixed Medicine: The Body as a Cabinet of Curiosity

Throngs of Belitung bowls on display in the Asian Civilizations Museum are decorated with birds, many of them in flight, and representative of many species. Two of the birds on display are beheaded, which has been interpreted as a fluke or private joke of an overworked artisan toiling at one of the planet's first sites of industrial mass-production. The bowls are more likely signifying something that is yet to be understood by scholars, especially because the outline of the severed neck on one of the birds is formed by calligraphy.<sup>259</sup>

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<sup>&</sup>lt;sup>255</sup> Daniel James Waller, "Curious Characters, Invented Scripts, and Charlatans? "Pseudo-scripts" in the Mesopotamian Magic Bowls," *Journal of Near Eastern Studies* 78, no. 1 (2019):119-139, 119.

<sup>&</sup>lt;sup>256</sup> Waller, *Curious*, 119-120.

<sup>&</sup>lt;sup>257</sup> Waller, Curious, 120.

<sup>&</sup>lt;sup>258</sup> Savage-Smith, *Magic*, 101-105.

<sup>&</sup>lt;sup>259</sup> In the *Qur'an*'s "Surah al-Baqarah," a power-hungry and violent king argues with Abraham, insisting that it is not Allah, but himself, who "gives life and causes death." (*Qur'an* 2:258-260) Abraham refutes him but asks God to "satisfy" his own heart, asking, "My Lord, show me how You give life to the dead." God asks him, "Have you not believed?" and Abraham answers, "Yes, but [I ask] only that my heart may be satisfied." Allah instructs him to slaughter four birds and spread their remains on separate hills, then, in

The *longue durée* is a way of talking about resilience. Persians traveled by sea to China before the Muslim conquest of Persia in 651 CE, continued after the military battles in the Western Regions, after the Abbasid revolution in 755 CE, persisted after the An Lushan rebellion and continued after the massacres of thousands of their brethren in Yangzhou in 760 CE. Within decades of the Belitung ship's departure from the southern port city of Guangzhou, many thousands of Persian and Arab merchants would be slaughtered in that city in 878 CE. <sup>260</sup> Tenth-century Persian merchant, al-Sīrāfī describes the events in Guangzhou in the following terms:

"Because of the events that occurred there, the trading voyages to China were abandoned and the country itself was ruined, leaving all traces of its greatness gone and everything in utter disarray...The reason for the deterioration of law and order in China, and for the end of the China trading voyages from Siraf, was an uprising led by a rebel from outside the ruling dynasty known as Huang Chao...he marched on the great cities of China, among them Khanfu: this city is the destination of Arab<sup>261</sup> merchants and lies a few days' journey from the sea on a great river where the water flows fresh. At first the citizens of Khanfu held out against him, but he subjected them to a long siege—this was in the year 264 [877-878]—until, at last, he took the city and put its people to the sword. Experts on Chinese affairs reported that the number of Muslims, Jews, Christians, and Zoroastrians massacred by him, quite apart from the native Chinese, was 120,000; all of them had

faith, to "call them" for "they will come [flying] to you in haste." The resurrection of the decapitated birds is known as the Miracle of Birds and is regarded as a proof of God's power over life and death. The Belitung bowl described earlier in this chapter, painted with the figure of a beheaded bird, may have been intended to instill a very particular form of medicine to its recipient, resilience.

<sup>&</sup>lt;sup>260</sup> Known then as Khanfu.

<sup>&</sup>lt;sup>261</sup> In context, meaning Abbasid, not just ethnic Arabs.

gone to settle in this city and become merchants there...Huang Chao also cut down all the trees in Khanfu, including all the mulberry trees; we single out mulberry trees for mention because the Chinese use their leaves for fodder for silkworms; owing to the destruction of the trees, the silkworms perished, and this, in turn, caused silk, in particular, to disappear from Arab lands."<sup>262</sup>

In addition to the murder of over a hundred thousand merchants, al-Sirafi is incensed by the aftermath and changes in how the Chinese in Khanfu began to treat Abbasid merchants. He writes:

"On top of all this, they extended the hand of injustice against merchants coming to their land. And, in addition to the harm done to the merchants, Arab<sup>263</sup> captains and shipowners began to be subjected to injustices and transgressions. The Chinese placed undue impositions on merchants, seized their property by force, and sanctioned practices which the custom of former times would in no way have allowed them engage. Because of this, God–exalted be His name–withdrew His blessings altogether from the Chinese, the sea itself became uncooperative, and ruin befell the ships' masters and pilots of Siraf and Oman, as ordained, in the course of events, by God the Ruler, may His name be blessed."<sup>264</sup>

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<sup>&</sup>lt;sup>262</sup> Abu Zayd al-Sirafi, *Accounts of China and India*, Tim Mackintosh-Smith, trans. (New York: New York University Press, 2014), 67-69.

<sup>&</sup>lt;sup>263</sup> Again, Abbasid.

<sup>&</sup>lt;sup>264</sup> al-Sīrāfī, *Accounts*, 71.

But Muslim merchants came back. Communities moved, responded, and adapted. Port life moved from Yangzhou and Hangzhou to Guangzhou, then Quanzhou. After the land routes were choked off in the Song, they picked up, as ever, by sea. Massacres and violence were only one danger of many faced by sea-travelers who risked their skin every season in a life to bring goods from one place to another. The physical evidence of their adversities comprises the central organizing archive of this dissertation, ships that took on water and collapsed under the weight of their cargoes, vessels and fortunes lost at sea, lives cut short, very far from home, in stormy waters.

The physical evidence of premodern medicine is submerged with their misfortune across the seafloors of the Indian Ocean and the Java and South China Seas, or hidden behind museum glass around the world and labelled as decorative art. Premodern intellectual history and scientific achievement in non-European societies have been neglected in Western historiography, for both practical and ideological reasons.

Medical "systems" and medical histories usually build their ontologies and ideologies around the body, and infuse constructions of the body with the social order that surrounds it.<sup>265</sup> Falk writes that the body "acts as the basic model for cosmological schemes rendering conceptual means to conceive of the Order of the outside world... The body functions as a scheme which is then projected and unnoticeably metaphorized into neutral linguistic categories and instruments of thought."<sup>266</sup> Likewise, Turner describes Douglas's analytic of the body as an organizing metaphor mediating our experiences of the world, a "source of allegories of order and disorder,"

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<sup>&</sup>lt;sup>265</sup> Pasi Falk, *The Consuming Body*. (London: Sage, 1994), 1.

<sup>&</sup>lt;sup>266</sup> Falk, *Body*, 1

and "the central metaphor of political and social order." Furth's "interpretative model" of Chinese medicine is also political, centered on "the Yellow Emperor's Body," "a metaphor calling attention to the conceptual point of view needed for us to connect classical medical theory to the human organism it was meant to explain." As a "cosmological rather than biological" body, it encapsulates "the norm as embodied in the Yellow Emperor himself," with "metaphorical links to a body politic of kingly power." <sup>269</sup> A missing section from the Tansugnama, a translation into Persian of Chinese medical texts in the Mongol period discussed in Chapter 5 of this dissertation, is described in its table of contents as detailing the political relationships between the organs of the body. Likewise, Martin has mapped more recent metaphors of the nation state and the Cold War within biomedicine's articulated sense of self in immunology textbooks from the 1950's and 1960's. 270 The body as a symbol of the state, with bounded borders, and weaponized defenses ties medical science and technology to the arms race and ethnic identity, and xenophobia to public health. Furth writes that politics and social relations have always been, from premodern times, "naturalized in the body because people experienced them in their social lives and saw them in the patterns ordering the cosmos at large. The body in turn spoke truths that then were mirrored in the world."271

But what about composite bodies? What truths about the world were mirrored in hybrid bodies, individually, and collectively? How do cosmologies of the body and the community that are

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<sup>&</sup>lt;sup>267</sup> Bryan S Turner in *The Body: Social Process and Cultural Theory*, Mike Featherstone, Mike Hepworth, and Bryan S. Turner, eds. (London: Sage Publications, 1991), 5.

<sup>&</sup>lt;sup>268</sup> Charlotte Furth, *A Flourishing Yin*. (Berkeley: University of California Press, 1999), 19-20.

<sup>&</sup>lt;sup>269</sup> Furth, *Yin*, 21.

<sup>&</sup>lt;sup>270</sup> Emily Martin, "Towards an Anthropology of Immunology: The Body as Nation State," Medical Anthropology Quarterly 4, no. 4 (1990):410-426.

<sup>&</sup>lt;sup>271</sup> Furth, *Yin*, 25.

chimeric collectives, moving between shores, identities, languages, and expectations reflect a world that is sometimes hostile and sometimes inviting? What coheres a diasporic body, assembled in translation? What heals it?

The hybrids described in this chapter, hybrids of powerful symbols of the social body, of transregional phoenixes, of busted up boats, and of conversations written in stoneware, reflect a different relationship between self and other than what dominates contemporary social and medical discourse. A hybrid or chimera is conjoined as a self-and-other combined, as a bodily collection, as an assemblage that reconstitutes the self. Though early modern and modern collectors in the European intellectual tradition certainly collected to fashion new senses of the self through mastery of the exotic other, premodern collecting in the context of the medical work of the maritime routes discussed in this dissertation was different, it was a collecting of the unconquered other. For much of its history, it was collecting without colonizing in any form.

The medical work of the trade routes situated the body as the site of collection. Herbs, remedies, and adornments sat in storage jars in ships' stowage next to ceramic utensils created to process and embibe them. Even in the face of great danger, healing substances and recipes composed of ingredients from far-flung lands were sought out and consumed in a centuries-long project that turned premodern bodies into curiosity cabinets, *wunderkammers* of healing. The therapeutic logic of trade route pharmacology was rooted in collecting: if you suffer from cold, ingest what is hot. If you suffer from heat, acquire what is cold. Curating a balance within your body between substances and humors and their qualia meant obtaining what you lacked both

commercially and ontologically, at the level of the body. Every patient was, therefore, a collector, and every prescription a compounded collection.

The iconic trade item most associated with this era, though more a product moving on the land routes than by sea, was silk. The feature of silk most prized on the Abbasid market was its  $b\bar{u}$ *qalamūn*. <sup>272</sup> iridescent lustre, the changeable shifting of color and light in its threads that resembled the surface of bird feathers or opals.<sup>273</sup> Lustreware achieved the same wonderinducing effect, containing flashes of multiple colors at once, depending on the shifting light and perspective of the viewer.<sup>274</sup> By wearing silk, the body could incorporate the 'ajab of foreign lands and simultaneously encompass the qualia of multiple flashes of color in a single garment. Similarly, the herbs from Africa, Southeast Asia, and China compounded together in hybrid vessels into remedies alongside more familiar ingredients from the Middle East enhanced chimeric bodies through consumption, collection, and exchange. Nappi has characterized the Ming dynasty Bencao Gangmu materia medica as a textual cabinet of curiosity, but it was created to document the living practices of the generations before.<sup>275</sup> For whatever the downfalls of thinking about the past with social theories from the present, Bhabha enjoins scholars to think through the lens of hybrids so that "we may elude the politics of polarity and emerge as the others of ourselves." The  $b\bar{u}$  galam $\bar{u}n$  body generated by the trade routes is a good place to begin. The body as a site of hybridity and collecting runs through multiple aspects of trade route medicine and is taken up again in Chapters 4 and 5.

<sup>&</sup>lt;sup>272</sup> بو قلمون

<sup>&</sup>lt;sup>273</sup> Saba, *Curious*, 193-194.

<sup>&</sup>lt;sup>274</sup> Saba, *Curious*, 193.

<sup>&</sup>lt;sup>275</sup> Carla Nappi, *The Monkey and the Inkpot* (Cambridge: Harvard University Press, 2009).

<sup>&</sup>lt;sup>276</sup> Bhabha, *Location*, 56.

## Conclusion

Practices of hybridity and resilience have endured in the Chinese Muslim community into modern times, as has the symbol of the phoenix. After the Cultural Revolution, Professor Li Shujiang, then the director of the Nationalities Literature Center at the University of Ningxia, gathered oral histories from Chinese Muslims, together with his graduate students. In 1981, a story was recorded by He Cun about the Silk Road town of Yinchuan. His informants told him that Yinchuan used to be known as "Phoenix City," and that the old people in the community remembered that the "Gaotai Temple [mosque] east of Yinchuan, by the Yellow River, is the head of the Phoenix; the two wells by the Gaotai Temple are its eyes; the Drum tower at the center of the city is the heart of the Phoenix; the West Tower and the North Tower are its claws; the trees, flowers, and grass in Zhongshan Park are the tail of the Phoenix—which used to be so long as to extend all the way to the Helan Mountains." The resemblance of this account to the Phoenix Mosque is striking, though here, the body of the phoenix has spread beyond the walls of the trade route mosque to include the entire community.

The informants told the researchers that the phoenix from which Yinchuan took its name came from southern China, that it lived south of the Yangtze River with her sisters in a beautiful, lush landscape as "the bird of happiness." That "wherever the Phoenix is, there happiness is." A red mythological bird is associated with the south in Chinese cosmology and medicine, though, in true hybrid-fashion, this geographic trajectory is also a parallel to the history of migration for

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<sup>&</sup>lt;sup>277</sup> Shujang Li and Karl W. Luckert *Mythology and Folklore of the Hui, A Muslim Chinese People* State University of New York Press Albany 1994:132

<sup>&</sup>lt;sup>278</sup> Li and Luckert 132

Muslims in China, first by sea in the south, and then across the land routes. According to the informants, when the Yellow River near Yinchuan, became "so shallow that it could not be channeled into the fields," and "the Hui<sup>279</sup>, the Mongol, and the Han people" suffered together, but "did not lose heart," the phoenix came to save them.<sup>280</sup>

The phoenix scratched irrigation canals from the riverbanks into the Yinchuan plain, she flew everywhere, raining sweat onto the soil, crops, and animals, and brought Yinchuan back to life.<sup>281</sup> Staying by their side for many years, the phoenix protected the people, again, from an invading tribe, who "pushed into" the land "like a cruel beast of prey." The informants said:

"They burnt crops and killed people. The Phoenix became very angry. She changed herself into a city to contain all the people inside her.... No matter how hard the enemies tried, they could not break her open... Ever thereafter, whenever an enemy came, the people would withdraw into the city for protection. As soon as the enemy withdrew they would re-emerge to resume farming and herding animals." <sup>282</sup>

This protective strategy worked until a corrupt official slit the phoenix's throat. Even though her body was dead, her heart continued to beat and filled a fresh canal with her blood, which flowed through the city. Again, this is a powerful use of hybrity. The red bird of the south is associated in Chinese medicine with blood and the heart, but here, it also performs a *simorgh*-like act of self-sacrifice and rescue. "As they admired the water flow, [the people] discovered some red

<sup>280</sup> Li and Luckert 132

<sup>&</sup>lt;sup>279</sup> Chinese Muslims

<sup>&</sup>lt;sup>281</sup> Li and Luckert 133

<sup>&</sup>lt;sup>282</sup> Li and Luckert 134-135

threads in it. Some old men recognized it as blood, and they began shouting, "Ah! There is blood in the water!" An "ahong," (Muslim cleric, from the Persian word akhund) and to the water, weeping, "beating his breast and stamping his feet: "Oh my Allah! It is true!"..." I dreamt I saw the Phoenix last night. She told me that she was being killed... She could not tear herself from us. Therefore she made a canal with her blood for us to irrigate the land." 285

This story demonstrates multiple elements of hybrid Chinese-Islamic culture. A bird with obvious Chinese cosmological associations performs the classic task of the savior-simorgh, first raining healing on the sickened land and then sheltering the community within the borders of its own hybrid body. Poetically, the simorgh is the body of the Persian community in China, and the oral history is a hybrid,  $b\bar{u}$   $qalam\bar{u}n$  story that reveals multiple elements depending on the light in which it is viewed.

The informants reported that even though the phoenix had sacrificed itself, its heart continued to beat as the people of Yinchuan cried, and it appeared to the *ahong*, again, in a dream on the tenth day of mourning. The first ten days of Muharram<sup>286</sup> are a sacred time of mourning and remembrance throughout the Shi'i diaspora that culminate in Ashura.<sup>287</sup> The rituals of Ashura (which means "tenth day") commemorate the martyrdom of Muhammad's grandson, the Imam Hussein, at the Battle of Karbala. The annual rites are a visceral evocation of the injustice of his murder that are not only the most intense expressions of mourning in global Shi'ism, but a

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<sup>&</sup>lt;sup>283</sup> Li and Luckert 137

<sup>&</sup>lt;sup>284</sup> A Muslim cleric: 阿訇, from the Persian, آخوند

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<sup>&</sup>lt;sup>286</sup> The first month of the Islamic year.

<sup>287</sup> عاشوراء

symbol of resistance and faith in a restorative divine justice yet to come. The phoenix of Yinchuan told the *ahong* "that her heart was still alive, that after another ninety-nine years she would rise again."<sup>288</sup>

Persian merchants returned to China's southern coast after the events of 878 CE, as they had always done. In time, they rebuilt from the ashes of the Guangzhou massacre in Fujian, slightly up the coast, where blazing-red flowering trees were planted by the local government.<sup>289</sup> The port city of Quanzhou would become one of the largest, most cosmopolitan cities flanking the maritime routes, and by the late eleventh century, would have its own supervisor of maritime trade, or *shibo shi*<sup>290</sup>, a term derived from the Persian *shahbandar*, <sup>291</sup> or harbormaster. <sup>292</sup> Incense, resins, spices, and medicines would make their way to and from Quanzhou's harbor every season, finding their way from the Southern Ocean into remedies across the Indian Ocean world.

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<sup>&</sup>lt;sup>288</sup>The story concludes with her return used as a metaphor for the Red Army reaching Yinchuan after the Long March in 1935. Li and Luckert 137

<sup>&</sup>lt;sup>289</sup> Quanzhou Museum, Schottenhammer 2010:145

<sup>290</sup> 市舶使

<sup>.</sup> 291 شاہ بندر

<sup>&</sup>lt;sup>292</sup> Wade 2015:72, Guy 2010: 22

**CHAPTER III** 

At Sea: Risk, Illumination, and Initiation on the Waters

The Waters

The medical experiences of travelers from the Persian Gulf to the coasts of southern China began as soon as they set sail. In addition to loading their vessels with trade goods in ports as they

progressed down the littoral of the Indian Ocean, they had to prepare for circumstances at sea

that would try them physically and spiritually as they made their way to China. Traveling on the

water and obtaining exotic goods and remedies from the East occurred within a symbolic

framework that infused the Persianate experience of the maritime routes since before the advent

of Islam. The relationship between illness, healing, and water has long been a preoccupation of

Iranian religion. Water was venerated in ancient Iran as a source of life and purification and

feared as a potential vector for contamination. In the Zoroastrian sacred texts, the Vendidad (Gift

Against Demons), and the Aban Niyayesh (The Litany to the Waters), the ever-present risk to

spiritual and physical health posed by contaminated water is solved by the Creator of the

Universe, Ahura Mazda, through the workings of a circulating cosmic water cycle. A heavenly

sea in the clouds<sup>293</sup> rains pure water down to the earth where it can foster life. Descending

through increasing levels of defilement on the earth and in the soil through contact with sickness

<sup>293</sup> Vourukasha

82

and the bones of the dead, the polluted water empties into the purifying waters of the ocean.<sup>294</sup> The violent movement and bubbling of the ocean waves cleanses the water, and in its rarified form, it evaporates upwards, reuniting with the heavenly sea of clouds, in a purified state.

According to scholar of Zoroastrianism, Darmesteter, this circulation of waters between heaven and earth came to be associated over time with the back and forth undulation of the tides on the Persian coast. He argues that the cosmological seas of the Avesta were eventually identified specifically with the waters at Persia's southernmost shore and the maritime opening into the Indian Ocean.<sup>295</sup> The *Aban Niyayesh* quotes Ahura Mazda, saying that "the outflow of this One water of mine penetrates to all the seven zones."296 The Persian traders who sailed those waters, carrying trade goods to and from Iran, travelled a thalassic cosmography and mercantile world where economic and numinous concerns held equal weight, and the risks and trials of participation in the monsoon circuit were as great as the rewards. They navigated what ninthcentury geographer al-Ya'qubi described as "the seven seas" connecting Iran to China. Like the mythological simurgh that nested in a primordial "tree of all seeds<sup>297</sup>" in the Avestan heavenly sea, they scattered healing plants and medicines across the trade routes through migration and exchange.<sup>298</sup>

The historiography of the premodern Indian Ocean World has largely focused on the role of

<sup>&</sup>lt;sup>294</sup> Puitika

<sup>&</sup>lt;sup>295</sup> Darmesteter 1880:54

<sup>&</sup>lt;sup>296</sup> Aban Niyayesh http://www.avesta.org/ka/niyayesh.htm 1. Based on edition of Karl F. Geldner, Avesta, the Sacred Books of the Parsis, Stuttgart, 1896. Translation by Dhalla, 1908.

<sup>&</sup>lt;sup>297</sup> Harvisptokhm

<sup>&</sup>lt;sup>298</sup> Darmesteter 1880:54; Vendidad 20.4; Yasht 12.17; Darmesteter 1880:lxix; Mukherjee 2011:62

Islam in the Western Indian Ocean, and the importance of Arab influence in the region.<sup>299</sup> Persian mariners of these waters are often not discussed in Western academic literature, and if they are, are frequently conflated with Arabs. This problem is amplified by translations of Chinese terminology for foreigners, like the term *Dàshí*, 大食, which is almost always rendered in English as "Arab," but is absolutely more capacious in Chinese sources. Zhao Ruguo, the supervising Song customs official of the port of Quanzhou, describes the origins of the Dàshí people who come and go from his city in the twelfth and thirteenth centuries. He writes, "this country (or people) was originally a branch of the Persians (波斯)."300,301 He describes transitions in terminology after Umayyad rule and then the Abbasid revolution, and names locations stretching the entire geographic expanse of Islam, from Tunis, Mecca, the Hadramaut coast, Iraq, Isfahan, coastal Balochistan, Chabahar, Bokhara, Ghazni, Zanzibar, and the Horn of Africa as their dependencies.<sup>302</sup> Hirth and Rockhill remark in the notes to their translation of this text that Dàshí referred not just to Arabs, but to the inhabitants of the entire "Mohammadan world."303 Tombstones recovered from the port cities of Quanzhou and Hangzhou are inscribed with Persian *nisbas* indicating places of origin in Iran. Despite Arab-focused treatments of the Islamic maritime world, an examination of the history of maritime trade in the Eastern Indian Ocean reveals an earlier and substantive Persianate influence, with critical implications for the spread of Islam and Persianate literary, scientific, and medical culture in premodern Southeast Asia and China.<sup>304</sup> Chaudhuri writes that "the main direction of trans-continental trade in the

<sup>&</sup>lt;sup>299</sup> See Janet Abu-Lughod, Edward Alpers, Kirti Chauduri, Michael Pearson, Abdul Sheriff, Eric Tagliocozzo, Engseng Ho, etc

<sup>&</sup>lt;sup>300</sup> Bōsī

<sup>&</sup>lt;sup>301</sup> Zhao Ruguo 1911: 117

<sup>&</sup>lt;sup>302</sup> Ibid 116-117, Hirth and Rockhill in Zhao 1911: 121-122

<sup>&</sup>lt;sup>303</sup> Ibid 119, note 1

<sup>&</sup>lt;sup>304</sup> King 2015:499

Indian Ocean during the eighth and ninth centuries appears to have been through neither Hijaz nor the Red Sea itself but through the Persian Gulf."<sup>305</sup> He asserts that Persian sailors played a critical role in linking the Eastern Indian Ocean with the Western shores, making the markets in Iraq and Persia the motivating forces for transregional trade. <sup>306</sup> Abu-Lughod also depicts the Persian Gulf trade routes as critical in pre-Islamic times, becoming "increasingly hegemonic during the early centuries of Islamic expansion."<sup>307</sup> Maritime trade with China increased during the Tang period and intensified under the Song. The late tenth century saw a consolidation of foreign merchant communities in Chinese port cities, and political upheaval in the north moved the heart of the Chinese economy to the maritime south in the Southern Song. <sup>308</sup> According to Liu, Persian had become the *lingua franca* of maritime trade along the eastern ocean routes by the Yuan period, and Persian Muslims with roots in China's port cities played an essential role in the spread of Islam to Southeast Asia. <sup>309</sup>

This chapter reintroduces Persian historical actors into the frame of analysis and attempts to reconstruct how these agents perceived the oceanic world in which they moved on their own terms, based on their own cosmologies, faith experiences, medical texts, artifacts, and personal belongings recovered from shipwrecks and port settlements. The Eastern Indian Ocean-Java Sea-South China Sea zone was a cosmopolitan epicenter of commerce and medical exchange and these heretofore-neglected actors played a significant and underrepresented role in shaping it

<sup>&</sup>lt;sup>305</sup> Chaudhuri 1985:46

<sup>&</sup>lt;sup>306</sup> Chaudhuri 1985:47

<sup>&</sup>lt;sup>307</sup> Abu-Lughod 1989:146

<sup>&</sup>lt;sup>308</sup> Derek Heng, "Shipping, Customs Procedures, and the Foreign Community: The 'Pingzhou Ketan' on Aspects of Guangzhou's Maritime Economy in the Late Eleventh Century," Journal of Song-Yuan Studies 38(2008): 3, 1, 27-28.

<sup>&</sup>lt;sup>309</sup> Liu 2010:87

through material and intellectual work. An influx of constituent ingredients for global medicinal recipes and the technologies used to process them moved through this region and through the hands and taxonomies of merchants. Medical practices must be understood within the cosmologies that give them meaning, but Muslim merchants are often depicted as mere movers of goods and carriers of religion, a long-distance line of ants carrying incense and spices. But premodern medical traders in the Eastern Indian Ocean, Java Sea, and South China Sea were doing important intellectual work as theorists and taxonomists. In the fourth and fifth chapters of this dissertation, this discussion will turn to pharmacy and developments in diagnostic epistemology that occurred as a result of these voyages. But this chapter precedes that discussion with an analysis of the portrait of the experiences of risk, adversity, benefit, and wonder of Persian seafarers left behind by the material traces of their forgotten lives lived at sea. Their phenomenological encounter with long-distance ocean travel and their experiences of their eastward destinations shaped the cultural uptake of the products and methods they carried back across the trade routes, imprinting their history of lived experiences on global commodities now available around the world.

#### The Seven Seas

The eastward journey began from the southern coast of Iran. Al-Ya'qūbī describes the Persian Gulf, or the Sea of Fars, as "the first of" the seven seas on the way to China. He describes the richness of its pearls at Siraf, followed by "many wonders and things that pass description" after passing the threshold outward into the Sea of Larawi. Al-Ya'qūbī notes that in the subsequent

<sup>310</sup> Mukherjee 2011:62

Sea of Harkand<sup>311</sup> lies the "Island of Sarandib," Sri Lanka, which is followed by the Sea of Kalah, <sup>312</sup> off of the Malay Peninsula, which is home to island-grown camphor trees and "huge serpents" that "sometimes ride the wind and smash ships." Al-Yaʻqūbī reports that the fifth and sixth seas, the Salahit<sup>314</sup> and Kardanj, <sup>315</sup> in Southeast Asia, are "filled with wonders" and rain, respectively, until, finally, "one is driven by the south wind" through the Sea of Sanji, the South China Sea, to "the fortified places and cities" of Khanfu, or Guangzhou. <sup>316</sup> Ibn Khordadbeh described in his 8th-century *Book of Routes and Provinces* the successive ports of Khanfu (Guangzhou), Janfu (Quanzhou), and Kantu (Yangzhou), lining the coast. <sup>317</sup>

Among the wonders travelers might encounter in the waters on the way to China were sea creatures that inspired terror and awe. A single Changsha bowl recovered from the seafloor of the Belitung wreck site depicts the dramatic and foreboding scene of a sea monster attacking and devouring a ship [See Figure 8: Changsha bowl depicting scene of shipwreck, from *Shipwrecked: Tang Treasures and Monsoon Winds*. Regina Krahl, John Guy, J. Keith Wilson, and Julian Raby, eds. (Washington, DC: Smithsonian Books, 2010), 22.]. The monster is identifiable as a *makara*, a creature from Hindu and Buddhist mythology, 318 and the vessel as a dhow of similar construction to the Belitung ship. The physical artifacts of broken and capsized ships reflect cosmopolitan approaches to the commingling of life and death and, at times, suggest

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<sup>311</sup> Bay of Bengal

<sup>312</sup> Kedah Sea

<sup>&</sup>lt;sup>313</sup> Mukherjee 2011:62

From the Malay word, *selat* (strait) (See Leonard Andaya, "The Orang Laut in the Negara Selat," https://www.iseas.edu.sg/images/2018seminar/25July/Leonard slides.pdf, iseas.edu.sg)

<sup>315</sup> Bordering Mainland Southeast Asia

<sup>&</sup>lt;sup>316</sup> Mukherjee 2011:62

<sup>&</sup>lt;sup>317</sup> Fan 310

<sup>318</sup> Based on the unique curling shape of its mouth and nose, Liu 492

a "common visual vocabulary" of design motifs and methods derived from "diverse belief systems" along the trade routes. According to historian John Guy, the brown and green painted image of the dhow on the shipwreck bowl is among the earliest depictions of an oceangoing vessel in Chinese art. The crumpling triangular sail, ordinarily advantageous for its maneuverability against the wind, reveals the existential angst of a technology overcome by the elements. The dark brown glaze that ordinarily frames only the edges of Changsha bowls has swelled, on this object, to extend over almost an entire half of the otherwise pale slip-covered surface. The darkness of the glaze peaks into several terrifying waves that create a sharp, demarcating line dividing the darkness of the waters on one side and the illuminated surface of the sea on the other. The scaled body of the *makara* disrupts this division, emerging from the darkness of the ocean to gnash its teeth at the bow and mast of the ship, crushing its wooden timbers and collapsing the sail. The moment that we witness on the bowl is the beginning of the end, the ship will return, with the *makara*, the "guardian of gateways," into the darkness of the waves.

The lower fin of the *makara* is painted in a style that resembles the Chinese art motif of flames, a maritime phenomena commonly accompanying shipwrecks, and in art, often paired with dragons in the form of flaming pearls or nimbi surrounding the bodies of sea creatures. The dark outline of the fin and the lighter brown shaded lines also resemble the Perso-Arabic calligraphic style  $\bar{S}\bar{t}n\bar{t}$ , and the fluid lines beneath the fin seem to signal the movement of the water as it gives way

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<sup>319</sup> Niziolek and Respess 2017:797

<sup>&</sup>lt;sup>320</sup> Guy in Krahl, et al 2010:22

<sup>321</sup> Hourani 109, Campbell 1

<sup>&</sup>lt;sup>322</sup> Robert Beer *The Handbook of Tibetan Buddhist Symbols* (Chicago: Serindia, 2003):78.

under the *makara*'s body. The water appears to rush into the darkness of what waits under the sea, flowing in visual terms reminiscent of a tenth-century Muslim seaman's description of the terrifying sight of a whale opening its mouth in calm waters, causing the surface of the sea to collapse, with fish and rushing water "sinking down into its depths as if into a well.<sup>323</sup>" Al-Sīrāfī describes a massive creature in a surviving tenth-century account of travel in these waters. Its opening passages are lost, but what remains of its account of the outset of the journey to China begins with the monstrous whale:

"It often raises its head above the water, and then you can see what an enormous thing it is. It also often blows water from its mouth, and the water spouts up like a great lighthouse (*minarah*). When the sea is calm and the fish shoal together, it gathers them in with its tail then opens its mouth, and the fish can be seen in its gullet, sinking down into its depths as if into a well. The ships that sail this sea are wary of it, and at night the crews bang wooden clappers (*nawaqis*) like those used by Christians, for fear that one of them will blunder into their ship and capsize it." 324

In the waters that first open out from the enclosed Persian coast into the vast expanse of the Indian Ocean at the Sea of Larawi, 325 Persian mariners described terrifying, awe-inspiring sights. The religious imagery of a minaret, 326 here translated by historian Mackintosh-Smith as "lighthouse," standing in for the tower of water exploding towards the sky from the body of the whale, speaks to an inward and subjective dimension of ocean travel, the personal experience of fear and wonder, moving out from familiar waters into an expansive sea. A minaret is not just a tower, but the visual symbol of the Islamic call to prayer. The god-fearing awe and terror that the tower of water must have evoked is further echoed in the use of Christian "clappers" as a deterrent to announce the ship's presence to creatures beneath the water during the darkness of

<sup>323</sup> al-Sīrāfī

<sup>324</sup> Sīrāfī (Book 1), Mackintosh-Smith, 2014: 23

<sup>325</sup> The Arabian Sea

<sup>326</sup> منار ة

night. Nawaqi clappers were also used as a "summons to prayer" and to mark ritual time and transformation in the liturgy. According to Mackinzie, from the eighth century onward, bells were put aside during the Paschal Triduum between Maundy Thursday and Easter Sunday in honor of the "Lord's silence in the tomb and the speechless timidity of the Apostles," and in their place, wooden clappers were used during Mass.<sup>327</sup> Direct contact with the mysteries of death and resurrection required the marking of ritual time with a strange-making device more solemn than the ringing of bells, and in the Eastern Church would also be a familiar call to action during the night. Wooden semantra were used in monastic life to signal the performance of the Midnight Office and Matins, rituals marking that night is here but light is coming. 328 But the wooden clapper has an even more direct symbolic association with life at sea. O'Brien records an Eastern tradition that God commanded Noah to construct the first wooden semantron, a "bell of boxwood," to mark the passage of time on the Ark and call the crew to work and rest. 329 According to O'Brien, the call to attention of "holy wood" symbolized the cycle of loss begun with the tree of knowledge in the Garden of Eden, and the redemptive "noise made in nailing to the wood of the cross the Saviour of the world."330 During the profound and powerful darkness of the night at sea, the clacking of wood would serve not only as a practical deterrent and temporal signal of passage through a dangerous liminal episode, but as a visceral invocation of divine help.

<sup>&</sup>lt;sup>327</sup> Mackinzie E.C. Walcott. Sacred Archaeology: A Popular Dictionary of Ecclesiastical Art and Institutions from Primitive to Modern Times. (London: L. Reeve & Co.,1868):511.

<sup>328</sup> Athelstan Riley. Athos: or, the Mountain of the Monks. (London: Longmans, Green, 1887):90-91.

<sup>&</sup>lt;sup>329</sup> John O'Brien. *A History of the Mass and its Ceremonies in the Eastern and Western Church*. (New York: Benziger Brothers,1879):148-149.

<sup>&</sup>lt;sup>330</sup> O'Brien 1879: 149

The description about makes clear that in the Southeast Asian waters where the *makara* bowl was recovered seafarers of multiple faiths were in constant contact. Whether in the form of a leviathan or a *makara*, sea monsters represented the dangers of seafaring and were a symbolic site where imagery of life and death combined. Water was not just a medium of travel, but of meaning, myth, and initiatory experience representing the essence of life that contains the threat of death, punctuated by the strange. Depictions of water like those on the *makara* shipwreck bowl demonstrate the experience of seafaring as a rite of passage between opposing forces that endowed its survivors and the objects they successfully carried across the sea with the charisma of survival and contact with the numinous. Products then made available through maritime trade possessed not only the exoticism of distant regions, but of a watery origin story infused with the source of life and the jaws of death.

For medical goods, this material juxtaposition of life and death mirrored and helped frame the experience of sickness and healing. Life and death intersected within an ailing body like living waters encircling the bones of the dead, a situation of juxtaposition and potential contamination and risk that required not just treatment for the body, but realignment of the cosmos.<sup>331</sup>

Merchants who had traversed this space and survived were uniquely qualified to offer remedies from beyond the ordinary experiences of their customers. The transit of the Avestan water cycle was not simply a cosmological effort to preserve public health and prevent illness, but a spiritual

<sup>&</sup>lt;sup>331</sup> In the Zoroastrian tradition, the greatest potential threat to the purity of water was contact with the dead. Anthropologist Mary Douglas famously argues that "our ideas about disease" do not fully "account for the range of our behavior" in avoiding and resolving contamination.# She writes that "dirt is essentially disorder," "dirt offends against order," and the actions of "separating, tidying, and purifying" are attempts to "make unity of experience" where "disparate elements are related and disparate experience is given meaning." (Mary Douglas, *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*. (Abingdon:Routledge, [1966] 2007):2.

resolution of the juxtaposition of opposing forces. Contact between water, what actualizes and enables life, and the cold material of death in the form of rotting bones and flesh, is anathema. The upturning or capsizing of life through sickness, the commingling of the waters of life with the flesh of death in the embodied illness experience, is something that could only be resolved through treatments, healers, and objects that possessed the power to resolve cosmological opposites.

Although terrifying, the image of the *makara* dragging a ship into the darkness of the water on the Belitung bowl is potent marketing of this resolution of opposites and evokes a promise made by Avalokitesvara in the sutra of the *Maha Karuna Dharani* (Great Compassion Mantra) promising protection to seafarers. The sutra proclaims that anyone who recites it will be protected from a terrible death, and that upon hearing its words the *makara* will retreat from attack. In relationship to the broader transregional logic of magic bowls, a vessel with this image could easily be imagined to transmit this protective charisma or its other maritime associations, to its contents. Tablet moulds and figurines including images of Avalokitesvara were also discovered at the Intan wreck site.<sup>332</sup> Figurines of the Buddha, ceremonial stands, *vajra* sceptres, and *ghanta* bells associated with Vajrayana Buddhism, and *Khakkhara* rattles, stupika moulds, votives, and glass evil eye beads made up a part of the multifaith traffic of spiritual goods carried across the waters and recovered from the Intan wreck.<sup>333</sup>

<sup>&</sup>lt;sup>332</sup> Flecker 2002: 35-54

<sup>&</sup>lt;sup>333</sup> Ibid 35-54, 78

Merchants also carried spiritual objects for their own protection at sea, including votive tablets.<sup>334</sup> A single metal figure of a "woman riding a sea creature," seemingly a personal possession of a crew member, was recovered from the twelfth-century Java Sea Shipwreck and has been identified by archaeologist John Miksic with an episode from Hindu mythology referenced in the Javanese text, Sri Tanjung and on local temple reliefs.<sup>335</sup> In a previous publication, Niziolek and I suggest that the object may have been "a totem of maritime safety," "female fidelity and... a reminder of... ties to... home." The myth referenced in the object concerns young lovers who first meet while the man is on a journey for the king to find medicine, and after the two are married, she is "wrongly accused of infidelity" while he is on another cosmic voyage, far away.<sup>337</sup> "In a fit of jealousy, her husband killed her before she had time to make preparations for her soul's salvation and she was carried into the next world by a monstrous fish."338 Because of her fidelity, her spilled blood is transformed to fragrant perfume (a trade item) and the two lovers are reunited through effort and divine intervention.<sup>339</sup> This story was depicted on Majapahit Javanese temple reliefs, 340 which could have made it a private devotional object associated with visits to these sites, but it would also powerfully represent the anxieties and hope for divine protection from the social risks faced by long-distance merchants from Southeast Asia and the Middle East.

<sup>&</sup>lt;sup>334</sup> Ibid 45

<sup>&</sup>lt;sup>335</sup> William Mathers and Michael Flecker. *Archaeological Recovery of the Java Sea Wreck*. (Annapolis: Pacific Sea Resources, 1997); Niziolek and Respess 2017:799, Miksic 1997:85, Kieven 2013:241-269; Wolters 1999:239

<sup>336</sup> Niziolek and Respess 2017:799

<sup>&</sup>lt;sup>337</sup> Bernard Arps. "Yusup, Sri Tanjung, and the Fragrant Water: The Adoption of a Popular Islamic Poem in Banyuwangi, East Java" in *Looking in Odd Mirrors: The Java Sea*, V. J. H. Houben, H. M. J. Maier, and W. van der Molen (eds.). (Leiden: Vakgroep Talen en Culturen van Zuidoost-Azië en Oceanië, 1992):123

<sup>338</sup> Niziolek and Respess 2017:799

<sup>&</sup>lt;sup>339</sup> Arps 1992:124-125

<sup>&</sup>lt;sup>340</sup> Arps 1992:125

Maintaining a connection to land, to roots, and to home provided an open link within which to negotiate the vulnerability and liminality of life at sea. Iranian earth was carried by merchants departing the coastal ports of the Persian Gulf as an amulet against shipwrecks, with the earth from the gravesite of a Sufi sheikh containing the powerful *baraka* of protection, blessing, and continuity.<sup>341</sup> A copper alloy amulet necklace charm in the form of a small canister was recovered from the Intan wreck, filled with "a flaky gray substance and many tiny clear crystals." It is unclear whether or not these materials represent the original contents of the charm or the byproducts of corrosion.<sup>342</sup>

# **Advice for Travelers**

In addition to methods for seeking spiritual protection, measures were also taken by seafarers against bodily, cosmological harm by medical means. Not long after the Intan vessel wrecked in the Java Sea, Persian polymath-philosopher-physician Ibn Sīnā<sup>343</sup> (980-1037) created *al-Qānūn fī al-Ṭibb*, the *Canon of Medicine*. Described as a "critical analysis" of known medical theories and practices, forged through his "personal experience and observations from treating patients,"<sup>344</sup> *al-Qānūn* brought together medical thinking from across the expanse of the

<sup>&</sup>lt;sup>341</sup> Kautz 2010:68

<sup>&</sup>lt;sup>342</sup> Flecker 2002: 99

<sup>343</sup> Avicenna

<sup>344</sup> Touwaide in Abu-Asab et al 2013:x

Islamicate world. Translated into Latin in the thirteenth century, it would become a core text of medieval European universities through the sixteenth century.<sup>345</sup>

A set of rules and remedies for managing the uncertainty and malaise of ocean travel would be a powerful comfort to seafarers separated from physicians and family members who might

<sup>345</sup> Touwaide in Abu-Asab et al 2013:x

<sup>&</sup>lt;sup>346</sup> Ibn Sina in Krueger translation 1963:13; Rabie El-Said Abdel-Halim, "The role of Ibn Sina (Avicenna)'s medical poem in the transmission of medical knowledge to medieval Europe," *Urology Annals* 2014 Jan-Mar; 6(1): 1–12.

<sup>347</sup> Ibn Sina in Krueger 1963:13

<sup>348</sup> Ibn Sina in Krueger 1963:15

otherwise tend to them back home. The significance of access to doctors who spoke familiar languages and were equipped to interpret the signs and symptoms of your suffering within familiar diagnostic schemes when one finally reached a foreign port would also significantly mediate the terrors of the sea. Ibn Sīnā's *urjūza* contributed a mobile network of medical theory and practice for travelers that would have been as familiar, and potentially life-saving, as an amulet of Iranian earth, which were recommended for sea travelers. After a very brief contextualizing sketch of the humoral cosmos of Ibn Sina, the special medical advice for travelers and those at sea contained in *al-Qānūn* and *al-Urjūza* will be summarized below.

Ibn Sīnā writes that the human "temperament has four energies—quwa—heat, cold, dryness and moisture, variously organized into simple and compound patterns." He explains that:

The simple patterns are in the elements—fire, air, water and earth which differ as well as resemble one another in the excess or deficiency of these qualities... Apart from the elements, every compound has its own particular dominance of these qualities. This is determined by measuring the qualities against a fixed standard. Every compound has thus its own excess or deficiency... Neither is entirely absent from any constitution, nor are they present in equal proportion. It is due to the dominance of these qualities that objects are known as being fiery, airy; earthy, and watery names which are mere abstractions.<sup>349</sup>

All things, then, are composed of water, fire, earth, and air, and are, in their nature, either more or less hot, cold, dry, or wet. When the balance between heat, cold, dryness, and moisture has

96

<sup>&</sup>lt;sup>349</sup> Ibn Sina in *Arjozah* (*Poem on Medicine*) in Shah pg xv

run amok, illness arises. Shah explains that heat and cold operate "as two opposite types of energy and dryness and moisture as two opposite qualities of mass." Ibn Sīnā writes that, "it is [of] their combination and organization that the various orders of things are formed in nature."

To create health in the body, every person is tasked with balancing the qualia of their daily intake of food and drink, and the environments in which they perform activities. The basic taxonomies of the elements frame pragmatic thinking about what to eat and when, as well as what substances or climates you need to seek out if you are out of balance. At the bodily level, this is a form of collecting. If you are deficient in one area, you must seek out what you lack. Your body is an assemblage that must be constantly curated. The quest for foreign medicines can be viewed as an extension of this practice at the group level, substances from exotic climes brought their own unique qualia that were worth the risk of travel.

In *al-Qānūn*, Ibn Sīnā writes that the medical-cosmological qualia are "found in the elements, in the seasons, in the kingdoms, and in places...Warmth is in fire and air, cold in earth and water, dryness between fire and earth, moisture between water and air."<sup>352</sup> Humoral vulnerability to imbalance in the elements was dependent on one's own constitution, clothing, the season of travel, the direction of wind, and the type of environmental landscape through which a traveler moved. The south wind brought on spoilage of supplies while the north wind caused a cough.<sup>353</sup>

24

<sup>&</sup>lt;sup>350</sup> Shah 1966:xv

<sup>&</sup>lt;sup>351</sup> Ibn Sina in Shah 1966:22

<sup>352</sup> Ibn Sina in Krueger 1963:16

<sup>353</sup> Ibn Sina in Krueger 1983:22

The journey from the Persian Gulf to the East began with the summer winds of the southwest monsoon, and after long voyages and months spent at port, return trips were possible with the northeastern winds in the winter and early spring of a subsequent year. Seafarers would suffer from each of the elements, in turn. Writing his *urjūza* from Iran, Ibn Sīnā advises travelers to:

"avoid sea voyages in winter and land voyages during the rainy season. Whoever travels by sea ought to carry enough water and be provided with a good cistern. For his voyage, give him moist and laxative food; if he fears seasickness, purge him and administer to him acid syrups mixed with some astringent liquids. To avoid uncleanliness, obtain changes of clothes for him. In the course of the trip, if lice multiply and he cannot get rid of them, it is necessary for him to take some wool, make a ribbon with it, dip it in mercury, rub himself with it, and wear this ribbon around his neck among his clothing until the real destruction of the lice." 355,356

Ocean travel comes with extremes of temperature, and climates in Southeast Asia and southern China are intensely hot and humid. Ibn Sīnā characterizes heat as "dangerous" for the traveler and gives multiple strategies to prevent heat stroke. He prescribes bloodletting before a journey, and for travelers with "copious bile," purgation to prevent thirst. He recommends syrups for such a patient before departure, a light diet of "cool vegetables," shielding travelers from the sun, rest, abstinence from all excitement, talking, and argumentation, if necessary, and the drinking "of a large amount of water all at once." For travelers who suffer from the intensity of their

<sup>&</sup>lt;sup>354</sup> Tripati and Raut, "Monsoon wind and maritime trade: a case study of historical evidence from Orissa, India," *Current Science* 90, no. 6 (2006):864, 870.

<sup>355</sup> Ibn Sina in Krueger 1963:58

 $<sup>^{356}</sup>$  Al-Qanun also recommends long birthwort or oil to treat vermin, Ibn Sina CM 455

thirst, he prescribes camphor pills, purslane juice, and sourgrape juice diluted in water. To protect the skin from sunburn and discoloration, he recommends applying a mixture of wax and oil, "as one does in the harems." <sup>357</sup>

In *al-Qānūn*, Ibn Sīnā's advice is more extensive and includes prevention of risk by avoiding journeys when one is "sanguineous" or suffering from another "plethora."<sup>358</sup> He prescribes great attention to diet and avoidance of fatigue before a trip is begun and adds the instruction to rub the body with oil in addition to bloodletting and purgation as a preparation. He recommends fasting and sleeping in the event of nausea before a trip and advises the gradual acclimation to hunger, thirst, sleeplessness, increased exertion, and the unfamiliar varieties of food that will be available on the journey.<sup>359</sup> He particularly advises concentrated foods with "a high degree of nutritive value" which will not awaken the thirst, and suggests remedies for the suffering caused by necessary fasting from food and drink for extended periods of time.<sup>360</sup>

To make it through the physical challenges of ocean travel, merchants needed at least a basic understanding of humoral medicine to succeed. Sea travelers were particularly cautioned against the afflictions of scotoma, vertigo, and motion sickness caused by the movements and brilliance of the water. To prevent motion sickness, Ibn Sīnā recommends eating fruits like quince, apple, and pomegranate, and a drink made from parsley seeds and water or absinthe.<sup>361</sup> These, and his other suggestions, give us some indication of the types of foods and remedies likely carried

<sup>&</sup>lt;sup>357</sup> Ibn Sina in Krueger 1963:59

<sup>358</sup> Ibn Sina in Canon of Medicine, trans, Laleh Bakhtiari 445

<sup>359</sup> Ibn Sina Canon of Medicine 446

<sup>&</sup>lt;sup>360</sup> Ibn Sina CM 446

<sup>&</sup>lt;sup>361</sup> Ibn Sina CM 454

onboard. Laying down in complete stillness is suggested to enhance the benefits of these medicinal drinks, but if the ocean is too rough, the drinks are recommended on their own to at least quell the nausea. Lentils, in vinegar, boiled with pennyroyal, or crushed and then dried for storage in an earthenware jar, would prevent seasickness by "nourishing the mouth of the stomach with tonic acetous substances, and such things as prevent vapors from rising into the head."362 Other substances in this category include sour grape juice, thyme, and bread moistened with water or in "weak and fragrant wine." For nausea that will not subside, Ibn Sina prescribes fasting from everything but sekanjabin<sup>363</sup> with thyme in water or fine polenta dissolved in water or weak wine.<sup>364</sup> Persians became associated with syrups in China and many of these remedies made their way into Chinese medical practice. Beyond these dietary remedies Ibn Sīnā prescribes white cosmetic lead to be applied to the nostrils, purposefully not looking at the ocean, and the frequent inhalation of the fragrances of quince, thyme, and pennyroyal. Other "antibilious" medicines should be consumed, if needed. These suggestions inform our understanding of the discomforts involved with these voyages and the phenomenology of the maritime trade.

Ibn Sīnā's advice to seafarers to "beware of the drinking water" is backed up with multiple prescribed methods of purification and treatment for different forms of potential contamination. He writes,

<sup>&</sup>lt;sup>362</sup> Ibn Sina CM 454

<sup>363</sup> oxymel

<sup>&</sup>lt;sup>364</sup> Ibn Sina CM 455

<sup>&</sup>lt;sup>365</sup> Ibn Sina CM 455

<sup>&</sup>lt;sup>366</sup> Ibn Sina CM 455

"the traveler is more exposed to illness from the diversity of the drinking water than from the diversity of foods. Hence it is necessary to be particular about correcting the bad qualities of the drinking water, and expend every effort in purifying it. (1) Procure the rapid passage of water from the body by inducing sweating. (2) Boil the water, for as we have already pointed out, boiling sometimes clarifies the water and separates off the impurities which are admixed with the intrinsic substance of the water. (3) The best measure is to distill the water. This may be done by making a wick out of twisted wool, one end of which is placed in the full vessel and the other into an empty vessel. Water will then escape from the one to the other drop by drop. This is a good way of clarifying water when it is necessary to do so frequently. When the water is bitter and altogether unwholesome, one should boil it, and add pure sand to it while it is boiling. It is then distilled over drop by drop by using the wool as mentioned above. It amounts to the same thing if the water be shaken with clean sand, especially when this material has been burnt in the sun. When the sand has settled, the water will be harmless. (4) Drink wine with the water, for that removes such injurious matter as is of feeble penetrative power. (5) If water is scarce and not attempered, it should be taken with vinegar, especially in summer time, because that prevents one from drinking too much."

His instructions for handling the dangers of impure water also include passing drinking water through a cloth to remove leeches, small creatures, "or any minute particles of evil nature suspended in it," and mixing it with "sour, thickened fruit juice with pulp," lettuce, garlic, and onions. He writes that a mixture of onion and vinegar added to water acts on "diverse waters"

"like a therica." He recommends adding sekanjabin infused with pulse, myrtle, and medlar to

salty water, and taking laxatives and wine after consuming bitter, aluminous water, while adding

rosewater and chickpeas to sour water. Especially "thick or turbid" water should be cleared with

rock alum before drinking and followed by the ingestion of garlic. 368

This chapter previously discussed the carrying of Iranian soil as an amulet for spiritual protection

by seafarers traveling from the Persian Gulf, but Ibn Sīnā makes two similar recommendations

for medical reasons. He advises carrying clay or sand from one's home and using that "to mix

with each successive specimen of water" and "shaking them with it" as a method of purification.

Alternatively, travelers are advised to "carry some of the water from... home" and mix it with

earth from "the inn in which he has stayed last," adding some of this mixture to the water at his

next stop, and then at each additional stop, repeating the procedure "in this manner until he

reaches his destination."369

All of the above instructions point towards ingredients, equipment, and technologies that would

likely have been on board long-distance ships for managing these risks. Mortars and pestles for

processing plant ingredients have been recovered from the Belitung and Intan wrecks, <sup>370</sup> and a

single ceramic crucible from the Intan.<sup>371</sup> Onboard the Belitung was also a grindstone and roller

and individual rolling pin,<sup>372</sup> while the Intan and Pulau Buaya wrecks both had a small number

<sup>367</sup> Ibn Sina CM 443-454

<sup>368</sup> Ibn Sina CM 453

<sup>369</sup> Ibn Sina CM 453-454

<sup>370</sup> Krahl et al 2010: 229-230; Flecker 2002:99

<sup>371</sup> Flecker 118

<sup>372</sup> Krahl, et al 2010: 229-230

102

of grindstones and rollers.<sup>373</sup> The Pulau Buaya and Java Sea Shipwrecks both had small earthenware stoves<sup>374</sup> and every shipwreck detailed in this dissertation possessed ceramic storage jars like the ones described above in Ibn Sīnā's prescription for lentils. The Belitung wreck had a single pair of tweezers and a needle which likely belonged to a medical kit used by the crew.<sup>375</sup> Other solitary objects recovered from multiple wrecks paint an even more lifelike and consistent picture of life onboard a long-distance vessel, and treatments for the more mundane afflictions of boredom and anxiety. Dice were recovered from both the Belitung and the Pulau Buaya ships, ivory gaming pieces from the Belitung,<sup>376</sup> and small, individual oil lamps used by the crews of the Belitung, Intan,<sup>377</sup> and Java Sea Shipwrecks to light the night.<sup>378</sup>

At the end of their journeys, Ibn Sīnā advises travelers to find a comfortable location away from the fire and wait an hour before sleeping. He instructs them to bathe and massage their skin until it is "ruddy," after which they should sleep "on a soft couch." Each of these instructions, artifacts and prescriptions contributes to an understanding of what it was like onboard a long-distance ship traveling from the Persian Gulf to Southeast Asia and China, of what it was like to pass time at sea, during both periods of crisis and of calm. For those that made it to China, many opportunities, and additional risks, awaited.

<sup>&</sup>lt;sup>373</sup> Flecker 2002:60-61, Abu Ridho and E. Edwards McKinnon. T*he Pulau Buaya Wreck: Finds from the Song Period.* (Jakarta: The Ceramic Society of Indonesia, 1998), 88-89.

<sup>374</sup> Ibid 74-75; Mathers and Flecker 1997

<sup>&</sup>lt;sup>375</sup> Krahl, et al 2010: 234-235

<sup>&</sup>lt;sup>376</sup> Ibid 232-233

<sup>&</sup>lt;sup>377</sup> Flecker 2002: 46

<sup>378</sup> Brown in Mather and Flecker 1997:180

<sup>&</sup>lt;sup>379</sup> Ibn Sina CM 447

### The Abode of Water

The gravestone of a doctor was among three Muslim tombs discovered hidden beneath muddy garden soil on the banks of Hangzhou's West Lake in 1923. These tombs number among the many Persian- and Arabic- inscribed graves and tombstones recovered there and across the expanse of eastern China over the last century. Hidden inside mosque walls, used in civic building projects and bridges, and revealed by upturning farm earth or dirt during road construction, these markers betray varying degrees of disrepair and outright desecration. The three West Lake tombs memorialize a physician saint, Purhatiyar, and his two companions. Together, the "three babas, 381" are locally remembered for bringing Islam and foreign medicine to Hangzhou during the Tang dynasty. The identities of the three babas are opaque and a subject of argument and speculation<sup>382</sup>, but their sarcophagi and stelae on West Lake are the center of regular rituals and an anchor for powerful myth and memory to this day.<sup>383</sup> Purhatiyar is remembered simultaneously, and at times conflictingly, as a merchant, a missionary, a holy man, and a doctor, the Muslim origin saint of Hangzhou, the Tang or Yuan descendant of both the Prophet and Sayyid Ājjal (the "father" of Islam in Southern China). <sup>384</sup> He is described as Bukharan, Meccan, and Persian, from a warrior tribe, Bakhtiari, and a servant of the Mongols. 385 The effort made by historians to tease out the verifiable from the foggy, the Tang from the Yuan, and the true from the false regarding his identity is empirically consequential. But of more relevance and use to this study is the simple fact of his veneration, and the utility of the identity

<sup>&</sup>lt;sup>380</sup> MME says 1921

<sup>&</sup>lt;sup>381</sup> Lane, George. in *The Mongol's Middle East* (Leiden: Brill, 2016), 249

<sup>382</sup> See Lane, Steinhard, etc, and me

<sup>&</sup>lt;sup>383</sup> Lane, my own experience of Hangzhou

<sup>&</sup>lt;sup>384</sup> Sayyid Ajjal

<sup>&</sup>lt;sup>385</sup> Lane, Steinhardt, etc

fusions at the heart of the preservation of his hybrid memory. The servation of the preservation of his hybrid memory. For those who decorate his grave or pray on its threshold, Purhatiyar encompasses the amalgamated memory of the origins of the coastal Muslim community: a merchant and a mystic, a doctor and a saint who brought Islam and foreign medicines to Hangzhou by sea, and comfort to travelers who were far from home. The entanglement of medicine, mercantile migration, and mysticism in his story embodies the entangled origin story of the premodern Muslims of the southeast who also came to China by sea, likewise carrying medicines, trade goods, and religion.

On a tombstone recovered from a nearby patch of earth from the same West Lake garden<sup>387</sup> where Purhatiyar rests is the line, written in Arabic, "Death is a sea with overpowering waves, the designs of the traveler sink within it."<sup>388</sup> The grave marker belongs to the Persian merchant, Khwāja 'Alā' al-Dīn al-Iṣfahānī and is elaborated in Persian, for good measure: "When all people are called to return to the land, why make your home in the abode of water, it is a house without foundation."<sup>389</sup> In other words, if the final port of destination for all men is the soil of the grave, do not waste your efforts on the ephemeral and fleeting. The lines on the marker intersperse the threatening realities of the harshness of the maritime life of a merchant, including the threat of shipwreck, alongside spiritual admonitions putting that life, and all life, into sharp

Translation my own

Lane 2019:126-129, Grave No 4. According to Lane, Ibn Manzur (in his *Muhktasir Tawarkh Dimashk*) records this line of poetry as a tombstone inscription by Abdullah ibn Rustom for the pious scholar, traveller and hadith collector, Abdullah ibn Mubarak Lane 2019:126

<sup>&</sup>lt;sup>386</sup> See Malinowski, Radcliffe-Brown, Geertz

<sup>&</sup>lt;sup>387</sup> Orioles Singing in the Willows, Jujing Garden, Lane

الموت بحر غالب موجه 388

تذهب فيه حيلة السائح

کی بازگشت همه خلق خاک خواهد بود :<sup>389</sup> Literally

بر آب جای چه سازی چون نیستش بنیاد

perspective. Another grave marker unearthed nearby, for a man named Badr al-Dīn, similarly reads, "Death is a sea with swelling waves, the designs of the traveler are crushed within it." 390

The warnings inscribed on the tombs of sea merchants were not cautions against sea travel, itself, but against the moral dangers of conducting it improperly, of skidding too close to the Scylla and Charybdis of the opposites of life and death merged in the water, or of attachment to the worldly goods and financial opportunities loaded into boats. The enormous potential payoffs financially made the risks of trade with Southeast Asia and China worthwhile for Persian travelers, but the tribulations and wonder of the ocean voyage, itself, rendered it a potential avenue of spiritual initiation and benefit with its own terrors and rewards.

The very real suffering of ocean travel and the difficulties of a life lived in exile that carried many believers to Chinese shores led premodern Muslim communities on the coast to designate ocean émigrés as martyrs on their gravestones. It was not the mere fact of suffering that earned this designation, but the unique spiritual meaning and benefits particularly produced by their travels. Martyrdom, like that experienced by the Yinchuan phoenix in the previous chapter, is a special kind of death, a lethal sacrifice that produces life within the effacement of the body and breakage of social bonds. It is a bridge between distinct categories that are usually in opposition, a commingling of the arenas of life and death that is not ordinarily possible. Geographically and elementally, the circulation of water embodied both extreme potentialities and limits. Water embodied the dynamic dual possibilities of taboo, life-giving power and life-threatening risk.<sup>391</sup>

<sup>&</sup>lt;sup>390</sup> 154, No. 8, 16

<sup>&</sup>lt;sup>391</sup> See Mary Douglas [1966] 2007

The category confusion of a martyr's *life by death* or of an émigré's *death in life*, was the resolution of the *fitna* of contact between water and bones. Maritime merchants also experienced a form of social death by leaving Iran and living in diaspora, as well as constant, living suffering on the water and in, at-times, unfriendly ports. For this suffering to be redeemed by the designation of martyrdom, the value of the sea journey had to have a greater value than economics. Healing, the spread of Islamic teaching and culture, and the quest for knowledge elevated this suffering to a spiritual good.

Many travelers by sea did not make it safely back to land for burials in gardens, to be memorialized by stone markers as martyrs and mourned by their new communities in prescribed rituals over the course of weeks and years. For those lost in shipwrecks, death was literally "a swelling wave" and their tombs, in the "abode of water," the broken bodies of their boats. The human remains recovered from a handful of wrecks in Southeast Asia and China testify to the risks undertaken by travelers, though the few bones that have been discovered are vastly outnumbered by the volume of cargo goods that have more easily survived the centuries submerged in water. The recovered bowl depicting a wreck being lost to the darkness of the waters and the mouth of the *makara* depicts a very real anxiety for merchants.

Images of the *makara* other than that found on the Changsha bowl described in this chapter have been recovered from shipwrecks in Southeast Asia, including multiple bowls from the Belitung wreck site with individual portraits of the creatures appearing menacingly alone on the surface of the stoneware. One exceptional bowl features a *makara* chasing a flaming pearl, surrounded by

cloud motifs comprised of stylized Arabic calligraphy. The flaming pearl and clouds situate the *makara* in a scene usually reserved for dragons in Chinese art, who chase the gleaming, moon-like, pearl over the water. Here, the Hindu-Buddhist *makara* has assumed this pursuit. Portions of the outlines of the clouds surrounding its body reproduce stylized text seen throughout the Belitung Changsha bowl collection, namely, a partially legible, textual icon of Muhammad's name. Another bowl from the wreck is even more explicit in its insertion of Islam into the transasiatic maritime motif of the flaming pearl above the water, with a central image of a flaming pearl inscribed with the clearly written text in Arabic, "Muhammad, the Prophet." This stunning image positions the risk, power, and precarity of the sea subordinately beneath the flaming light of the Prophet.

# **Darkness and Light**

The themes of light and darkness play out in other materials recovered from shipwrecks. A bronze *makara*-type water spout was recovered from the tenth-century Intan wreck alongside other ritual vessels and door knockers with the bolts still attached from disintegrated, ghost doors in the shape of a *Kala*-head.<sup>394</sup>,<sup>395</sup> According to Flecker, the *kala* monster and *makara*, often paired together, symbolized the "two primordial elements" of "sun and light" and "water and darkness" that formed the universe. Flecker writes that "gods and demons once churned the ocean to make an elixir of immortality," which *kala* stole and returned to the surface, a crime for which it was beheaded at the mouth, leaving it mangled, but alive.<sup>396</sup>

<sup>&</sup>lt;sup>392</sup> Asian Civilizations Museum (ACM) Accession Number 2005.1.00249

<sup>&</sup>lt;sup>393</sup> ACM photograph, Cat 476

<sup>&</sup>lt;sup>394</sup> Flecker 2002: 35

<sup>&</sup>lt;sup>395</sup> Ibid 34-54

<sup>&</sup>lt;sup>396</sup> Ibid 54

In the vast spaces between ports, the long-distance journey across the water was movement across a sea of darkness. The blackness of night was alleviated by lamps, but the experience of total envelopment in the velvet black of night was an environmental fixture of premodern ocean travel. The pursuit of light, in the form of a flaming pearl or the moon and stars took on material and mystical dimensions. The remainder of this chapter considers the material evidence for understanding both the literal and metaphysical sources of light for Muslim travelers at sea.

In 1997, archaeologist Michael Flecker oversaw the recovery of a tenth-century shipwreck from the Java Sea. The Intan shipwreck, as it has come to be known, contained trade goods and other materials that provide a unique window into the commercial appetites and the navigational methods of the maritime routes that made Southeast Asia the unifying transit hub connecting premodern Africa, the Middle East, South Asia, and China by sea.<sup>397</sup> It is likely that the ship went down en route from Srivijayan Palembang, Sumatra to Tuban, in Java, after having taken on a mixed cargo of goods originating from diverse, farflung locations.<sup>398</sup>

In addition to thousands of manufactured artifacts recovered from the Intan wreck, many well-preserved organic materials also survived on the seafloor, protected for over 1000 years.

Hundreds of candlenuts (*Aleurites moluccana*), known in the region as kemiri, were brought up, and, according to the archaeological report of the excavation, their "low specific gravity" led to their "wide and fairly uniform dispersal" pattern across the wreck site underwater. In addition

<sup>&</sup>lt;sup>397</sup> Flecker 2002:1

<sup>&</sup>lt;sup>398</sup> Ibid 2002:122

to these loose candlenuts, a single storage jar, sunk at the bow of the ship, still contained 34 intact, undispersed, nuts.<sup>399</sup> I propose that the candlenuts were onboard not as a trade item, but because they were intended to be used onboard for illumination.

Candlenuts are thought to have originated in the maritime space encompassing the tip of southern India and peninsular and island Southeast Asia, and then spread outward from there through the global tropics. 400 Processed candlenuts can be eaten in small quantities or added to relishes and stews, though uncooked nuts are potent and prescribed in regional medicinal recipes as powerful laxatives. 401 This would not have made them a great food source for the ship's crew. but potentially useful in following medical advice for travelers. 402 Because they were not (and are not) difficult to come by in Java, Flecker expresses wonder in the archaeological report at the presence of so great a quantity of candlenuts being onboard the Intan ship at all. He concludes, from their sheer numbers, that they must have been a trade item, and speculates at the possibility that demand in Java may have overwhelmed supply, necessitating importation of the nuts from their neighbors in Sumatra. 403 This is a possibility. But it is counterintuitive in terms of the high availability of candlenuts and the risks and costs involved in shipping, at least based on what is currently understood about supply. Candlenuts were common. Flecker also speaks to the unlikelihood that the whole nuts were being shipped so that their oils could be extracted at their destination in Java. He writes, "it seems unlikely that cargo space would be taken up with raw

<sup>&</sup>lt;sup>399</sup> Flecker 2002:30, 92

<sup>&</sup>lt;sup>400</sup> Blench 2004:43; Larrue et al: 2010

<sup>&</sup>lt;sup>401</sup> Armando Enrique González-Stuart and José Ortíz Rivera, 2017. Toxicity of candlenut seed (Aleurites moluccanus), a purported herbal weight loss supplement. Pharmacologia, 8: 25-31

<sup>&</sup>lt;sup>402</sup> Morton 1992:252

<sup>&</sup>lt;sup>403</sup> Flecker 2002:93

materials when the end product, oil, could be easily transported in ceramic jars taking up much less space." He cites the earlier conclusions of Burkill from his *Dictionary of Economic*Products from the Malay Peninsula that it would not have been "worthwhile to ship the whole nut" within Southeast Asia, and that "oil extraction" would, therefore, be limited to the "countries where the tree grows." Flecker looks at this strange, unexpected assemblage of nuts, and tries to make sense of it, offering up the "tentative" explanation that they were intended for use as a spice. Even so, the nuts have remained mysterious, not quite fitting the profile of a trade good and not quite fitting the profile of a foodstuff or supply.

It is approximately 500 nautical miles from Palembang to Tuban, port to port. This would have taken the Intan vessel many days to travel. In the archaeology report, Flecker describes the common practice on land of pounding candlenuts into pulp and combining the pulp with other organic materials into hand-formed candles using bamboo splints. Processed either into candles or for their oil, candlenuts are an abundant source of illumination, hence their name. However, the whole nuts on the boat would not have been practical for either of these processed forms of illumination, but whole candlenuts are so high in oil that they burn, unprocessed, on their own, like torches.

In the Pacific islands of Oceania, candlenuts have long been identified in multiple forms of illuminators like lamps and torches, but are especially associated, whole, with open, outdoor lighting. Their portability and durability have made them popular torches for night-fishing and

<sup>&</sup>lt;sup>404</sup> Burkill 1966:94 in Flecker 2002:93

<sup>&</sup>lt;sup>405</sup> Flecker 2002: 93

<sup>&</sup>lt;sup>406</sup> Flecker 2002:92

night navigation. 407 Captain Cook, himself, described candlenut torches and their "oily nuts, which are stuck upon a kind of skewer, and burnt as candles." 408 Having spread from western Austronesia eastward to Polynesia, where they are known as *kukui*, candlenuts are put to similar uses throughout the massive, oceanic region. Nuts of the same size are known to burn for uniform measurements of time, small ones for around 2 minutes and larger ones upwards of 10 minutes, or more, each. 409 In the Marquesas, a series of candlenuts is tied off intermittently on a torch, creating a portable, flaming clock. 410

In addition to the usefulness of a relatively safe and highly portable light source on board a ship, candlenuts may have also been used for navigational purposes as timekeepers. If you select uniform nuts, for example, ten, that burn for six minutes, each, you have a clock that burns for an hour. As each nut burns out, it lights the one beneath it. Large nuts burned sequentially in this way at the bow of a ship would not only illuminate the night, but tell you how long it had been since you set sail, or from your last waypoint, allowing you to calculate longitude when your surroundings are shrouded in darkness.<sup>411</sup>

One of the biggest problems encountered by European navigators during their "Age of Exploration" was the terrible difficulty in determining longitude at sea. European powers competed for a navigational edge, offering monetary prizes and establishing commissions

<sup>&</sup>lt;sup>407</sup> Söderström 1938:69, 77

<sup>&</sup>lt;sup>408</sup> Cook in Söderström 1938:77

<sup>&</sup>lt;sup>409</sup> Morton 1992:253; Hough 1893:207

<sup>&</sup>lt;sup>410</sup> Hough 1893:207

<sup>&</sup>lt;sup>411</sup> We are so accustomed to thinking of the Spice Routes as a source of things sought after by European maritime technologies, we have failed to remember that they are also a source of technologies in their own right.

looking for practical solutions to the longitude problem. Spain, the Netherlands, France, and England produced rival methods and devices, fashioning marine clocks and chronometers that would ultimately shape the modern sense of both time and place, of where and who *we*, the citizens of modernity, are in the world. But technologies of timekeeping at sea did not begin with European navigation. The *longue durée* of light on the water and the phenomenology of darkness at sea shaped technologies, cosmologies, and geographies across the premodern trade routes long before European powers competed for an edge.

# "An Olive of neither the East nor the West"

The experience of near-total emersion in darkness at sea inspired gratitude in merchants who made it to shore alive. In the port city of Quanzhou, which became the major point of arrival for Persians traveling to China after the Guangzhou massacre, a Qur'anic inscription on the qibla wall of the eleventh-century Aṣhāb mosque enjoined believers who had survived the journey,

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<sup>412</sup> The material culture of maritime trade, exploration, and navigation is a deeply fraught and politicized matter that infuses museum exhibits, disciplinary fights, and nationalistic discourses around the globe, even shaping the "modern" sense of self and time. Objects used to find latitude and longitude at sea are particularly symbolic of the onward march of technological prowess and appear in our national museums as sacred relics of Western scientific exceptionalism. Arguments about who got there first, and how, and with what stuff loom large in cultural chauvinisms around the world. Modernity is often configured around European navigation of the Atlantic, and the physical trail of astrolabes, lateen sails, quadrants, and chronometers left in its wake points towards where we have come from, and where we think we're going. Materials related to keeping accurate time at sea, which is critical for determining longitude, occupy a deeply competitive, nationalistic niche within this political reliquary. In many cases, our understandings of the physical materials of navigation point more towards where we think we have come from than the realities of the actual global maritime past. Objects recovered from the Intan Shipwreck in the Java Sea provide us with a unique, tenth-century material predicament with which to think about the status of timekeeping devices on the oceans.

"those possessed of minds," to contemplate the signs hidden in "the succession of night and day."

During the Tang period, Guangzhou had been the primary port of settlement for Persian and Arab merchants until conditions there shifted during the Song and their migration transferred to points up the coast. 414 The Huaisheng Mosque and its *guangta* minaret in Guangzhou are traditionally dated to the seventh century, to the introduction of Islam to China by companions of the Prophet, including Sa'd ibn Abī Waqqās, who is remembered in the origin story of Chinese Islam for bringing the new religion to the East by sea. Waqqās has a tomb in Guangzhou, which remains an extremely important shrine and pilgrimage site for Muslims from all over China and abroad. Historians have contested the Tang dating of the Huaisheng mosque due to a lack of surviving records, though the ninth-century massacre of the Muslim community and destruction of their property would certainly have destroyed significant evidence. The historical presence of Waqqās in China is also highly contested, though his formative role in establishing Islam on the coast is a central, organizing principle of the founding mythology of Chinese Islam. Perhaps, like the grave of Purhatiyar in Hangzhou, it is more useful to understand what the story of Waqqās in China is doing for Chinese Muslims, and what his physical presence represents. As a family member and direct companion of the Prophet, Waqqās represents the immediacy of blood

<sup>&</sup>lt;sup>413</sup> Chen Dasheng, trans, Islamic Inscriptions of Quanzhou 9, 1984; Qur'an 3:186-189

<sup>&</sup>lt;sup>414</sup> Heng 2008:30

and spiritual connection to the Prophet and the first generation of Muslims. Waqqās is known to historians for his role in the Islamic conquest of Persia, and for Chinese Muslims, his continued journey eastward to Guangzhou symbolically enlists China under the banner of the Islamic world. According to Fan, in the Tang period, the *fanfang*<sup>415</sup> of Guangzhou functioned like "an enclave enjoying extraterritoriality," operating under the official administration of Islamic law.<sup>416</sup>

When the lighthouse of Guangzhou's minaret was no longer a safe beacon for arriving Muslims, Quanzhou rose to the occasion. Archaeological evidence of six distinct Middle Period mosques has been recovered there, with the Aṣḥāb (apostle, companion, friend) still standing today. The mosque walls are lined with carved inscriptions that would be particularly meaningful to merchants, exiles, and those recovering from the losses suffered at Guangzhou. Inscribed in a niche adjacent to the mihrab are the words from the Qur'an:

"dost thou not see that God joins on the night to the day, and joins on the day to the night...dost thou not see that the ship rides on in the sea by the favor of God, that He may show you His signs? Verily, in that are signs to every grateful person."

 $^{415}$  Foreign merchant's neighborhood or enclave

<sup>417</sup> Pearson et al 2002:35-36

<sup>&</sup>lt;sup>416</sup> Fan 2001:311

<sup>418</sup> Qur'an 31:28-30; Chen Dasheng IIQ 8

The gratitude of the Muslim merchant community of Quanzhou expressed itself in numerous building projects and good works for their fellow believers. The city was immortalized as the vibrant intercultural port of Zaytūn (¿نِئون) in Ibn Battuta's famous 14th-century travelogue. The Destitute merchants fallen on hard times, out of money and far from home, were presented with money orders by the Kāzarūnī Sufi order to be cashed out by any other merchant who had made their sheikh a vow. Kāzarūnī merchants left Iran for destinations across the Indian Ocean World and the South China Sea, making vows to the order (and taking with them dust from the gravesite of their founder, Abū Isḥāq Ibrāhīm). If they arrived safely at their destination in China, they paid their vows to the sheikh at port, or directly to the destitute upon presentation of the money order. The charity provided by the Kāzarūnī order also included lodging and meals in exchange for participation in the work of the community.

The Kāzarūnīs provided social structure, the guarantee of spiritual and physical safety at sea, and a massive network of community for travellers who stayed in their religious lodgings spread throughout the region. Ibn Battuta described a robust community at their *khanaqa* (religious lodging) when he visited Quanzhou. He wrote that the Kāzarūnī sheikh Burhan al-Dīn

<sup>&</sup>lt;sup>419</sup> Ibn Battuta 1994:894--895

<sup>&</sup>lt;sup>420</sup> Kautz 2010:68

<sup>&</sup>lt;sup>421</sup> Kautz 2010:67

<sup>&</sup>lt;sup>422</sup> Kautz 2010:62,64

<sup>&</sup>lt;sup>423</sup> Battuta 1994:894-895

collected the financial pledges of merchants arriving from western Asia, and that across the

region "there is not a ship that comes from China or from India but has thousands of dinars in it"

pledged to the order. 424 Kautz has asserted that an extremely unique aspect of the Persianate

Kāzarūnī order abroad was that it retained a vital operational connection to the central khanaga

back home in Kāzarūn, which organized its activities. 425

The Kāzarūnī merchant brethren of Quanzhou were linked with other, more orthodox believers

in shared reverence for a particular hill in the southeastern part of the city. Many sources,

including the Song Taipinguangji and Ming Minshu, assert that four companions of the Prophet

Muhammad, including Waqqās, migrated to China during the Tang dynasty, in the earliest days

of Islam. 426 Two of these disciples, believed to be sent by Muhammad himself, were buried in

the foothills of Quanzhou's Lingshan, where their tomb shrine remains.<sup>427</sup> This geographic

proximity to Muhammad's companions imbued Quanzhou, like Guangzhou, with the baraka of

the Prophet and collapsed the distance between the holy figures of Islam and the spatial remove

of China.

An enormous Muslim cemetery sprang up around the site of the Lingshan tombs. An entry in the

Zhufan Zhi describes the establishment of a cemetery for foreign merchants by a Persian trader

who was "filled with the spirit of his western home." <sup>428</sup> Zhao writes:

424 Battuta 1999:320; 1994:894-895

<sup>425</sup> Kautz 2010: 69

<sup>426</sup> He 1995; Fan 1996:312-313

<sup>427</sup> Pearson et al 2002: 43; Zhao 2012: 119,124; Park 2012:51-52

<sup>428</sup> Zhao 1911: 119,124; Park 2012:51-52

117

A foreign trader by the name of Shi Nawei, a *Dashi* by birth, established himself in the southern suburb of Quanzhou. Disdaining wealth, but charitable and filled with the spirit of his western home, he built a charnel house in the south-western corner of the suburb (or outside the city in the south-west direction) as the last resting-place for the abandoned bodies of foreign traders.<sup>429</sup>

The majority of the Islamic tombstones recovered in Quanzhou have been separated from their graves and original contexts since political and religious-ethnic conflicts in the fourteenth and fifteenth centuries. A few original cemeteries remain, but the extant monuments and remnants of monuments have been recovered only after profound desecration. In Chen Dasheng's study, 149 tombstones were examined originating from the Renfeng Gate and Tonghuai Gate cemeteries, from the walls and burial plot of the Aṣḥāb Mosque, and from other unknown original contexts. Inscriptions range from Persian to Arabic in multiple calligraphic styles, but the majority describe deceased Muslims of Persian origin. Chen records inscriptions for individuals hailing from Bukhara, Gilan, Hamadan, Isfahan, Jajarm, Khorazm, Khurasan, Siraf, Shiraz, and Tabriz, with some describing multi-generational presence for Persian families in Ouanzhou.

<sup>&</sup>lt;sup>429</sup> Zhao 1911: 119

<sup>&</sup>lt;sup>430</sup> Pearson et al 2002:40

<sup>&</sup>lt;sup>431</sup> Pearson et al 2002:40

<sup>432</sup> Chen Dasheng IIQ, Pearson et al 2002:40

<sup>&</sup>lt;sup>433</sup> Chen Dasheng IIQ 29-111, 1-64; Pearson et al 2002:40

 $<sup>^{434}</sup>$  Ibid

There is evidence indicating that Quanzhou's Islamic tombstones were not just used locally, but exported for other Muslim merchant communities abroad. The area surrounding Quanzhou possessed the raw materials necessary for the stone industry, and the demonstrated expertise for stone-cutting and carving. Multiple Muslim tombstones excavated in Brunei are thought to have been manufactured and shipped out from Quanzhou. Lambourn has described networks of Islamic tombstone distribution around the Indian Ocean and South China Sea linking Fujian to Brunei, the Philippines, and Sumatra starting in the thirteenth century. Interestingly, the best-known example of a style of Islamic tombstones often produced for export in the Indian port city of Khambhat was for a merchant buried there in the fourteenth century known by the nisba of Kazaruni.

According to local Quanzhou legend, the Lingshan tombs of the companions of the Prophet emitted a glowing light during the night, which could be seen at a distance. Historians of the maritime world in which Quanzhou played a critical role have put forth less-than-satisfying theories as to why the city became known as  $Zayt\bar{u}n$ , or olive, in the Arabic and Persian speaking worlds, but I propose the association is based on light. Schottenhammer points out that the olive tree, qidun, was not cultivated in China. The  $Youyang\ Zazu$  describes them as Persian trees used for the production of oil. How

<sup>&</sup>lt;sup>435</sup> Salmon and Sidharta 2006:197

<sup>436</sup> Salmon and Sidharta 2006:197

<sup>&</sup>lt;sup>437</sup> Lambourn 2004:99

<sup>438</sup> Salmon and Sidharta 2006:198

https://www.fujian.gov.cn/english/UsefulInformation/PlacestoVisit/201701/t20170125 1869533.htm

<sup>&</sup>lt;sup>440</sup> Schottenhammer 2010:144-146

Many scholars have associated the mass-planting of the red-blossomed citong tree (erythrina variegata) in Quanzhou in the tenth century by Liu Congxiao as the cause of the new city name in the Islamic world. The abundant red flowers caused Chinese-speakers to gradually begin referring to the city as Citong Cheng (Citong City), and the assumption is that Zaytūn was a phonetic rendering of this designation. 441 Although strikingly beautiful, and as time passed and the trees matured, perhaps somewhat novel to the Song elite who became newer residents of the southern coast, citong trees were not an especially unusual sight for monsoon merchants accustomed to traveling the Indian Ocean littoral. Citong trees were a source of tong oil (vernicia or aleurites fordii)<sup>442</sup> commonly used for waterproofing ships. Citong grows very well at sea-level, is tolerant of salty conditions and waterlogging, and is often found along the ocean littoral, as some varieties are useful as a coastal windbreak. 443 For even more terminological clarity, a plant local to southern China and referred to as the Chinese olive, or ganlan, does look very much like an olive, but is, in fact, a canarium. The canarium was also used for varnish and in caulking ships, 444 and an example has been recovered from the Java Sea Shipwreck. To complicate and clarify things further, a bosi ganlan, or "Persian olive," is described in the Song materia medica, the Kaibao Bencao (973). 445 Though referred to by the Chinese as an olive, this plant probably represents senjed (Elaeagnus angustifolia), 446 and would not have been conflated for an olive by Persian or Muslim merchants.

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<sup>441</sup> Schottenhammer 145

<sup>442</sup> Schottenhammer 145, Samanta and Laskar 2013:433

<sup>443</sup> Whistler and Elevitch 2006:2

<sup>444</sup> Schottenhammer 2010:145; Burkill's A Dictionary of Economic Products 1935:427

<sup>445</sup> Schottenhammer 2010:145

 $<sup>^{446}</sup>$  Used in ritual and for the relief of muscle and joint pain in traditional Persian medicine, Mikaili et al 2012:155.

The stone carving on the first niche adjacent to the mihrab at Quanzhou's Aṣḥāb mosque reads:

"God is the light of the heavens and the earth; His light is as a niche in which is a lamp,
and the lamp is in a glass, the glass is as though it were a glittering star; it is lit from a
blessed tree, an olive neither of the east nor of the west, the oil of which would well-nigh
give light though no fire touched it, -light upon light!-God guides to His light whom He
pleases; and God strikes out parables for men, and God all things doth know. In the
houses God has permitted to be reared and His name to be mentioned therein- His praises
are celebrated therein (mornings and evenings)."447

The next niche continues the carved inscription: "Men whom neither merchandize nor selling divert from the remembrance of God and steadfastness in prayer and giving alms..." This passage is from the same surah quoted above, and contextualizes the approach towards the light which is neither of the east nor the west in a discussion of the sins of material attachment experienced by merchants:

"But those who disbelieved - their deeds are like a mirage in a lowland which a thirsty one thinks is water until, when he comes to it, he finds it is nothing but finds Allah before Him, and He will pay him in full his due; and Allah is swift in account. Or [they are] like darknesses within an unfathomable sea which is covered by waves, upon which are waves, over which are clouds - darknesses, some of them upon others. When one puts out his hand [therein], he can hardly see it. And he to whom Allah has not granted light - for him there is no light."

<sup>&</sup>lt;sup>447</sup> Qur'an 24:35-36, Chen Dasheng IIQ 7

 $<sup>^{448}</sup>$  Qur'an 24:37-38, Chen Dasheng IIQ 7

<sup>449</sup> Qur'an 24:37-40

The only relief for the suffering of pitch-black darkness at sea, for unbelief, or for avarice, is the light of *Zaytūn*. An established religious community, sanctified by the glowing light and material dust of the Prophet's closest companions, a home "neither of the east nor of the west," and navigational symbol of the light, "as though it were a glittering star," guided travelers through the impenetrable darkness of the waters.

**CHAPTER IV** 

Shipwreck Medicine: Analysis of Recovered Drugs and Medical Cargoes

**Domesticating Medicine** 

This chapter will explore the material culture of the Persian drug trade in the East. It is difficult

to overstate how influential the development of white Chinese porcelain was on medieval and

early modern material culture across the trade routes. High-fired and produced with unique raw

materials, white porcelains made in southern China fused durability with wonder-inducing

beauty. 450 In addition to their aesthetic influence, these Chinese ceramics also had a significant

and underexplored impact on transregional medical practice. Before white, faux-porcelain

emerged as a visual signifier of early modern globalization and moved like a ripple effect

through clay across European markets, it began in the encounter between medieval Muslim and

Chinese merchants and artisans. This chapter will explore the synergistic relationship between

the exchange of medicines and medical material culture on the medieval Maritime Silk Road by

examining storage jars, utensils, and drugs that have been excavated from the seafloor. Over

time, Persian material culture adapted to and domesticated East and Southeast Asian drugs,

creating aesthetic trends that would spread around the globe. Near Eastern pharmacies became

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<sup>450</sup> For a discussion of early porcelain production and terminology, see Guo Yanyi, "Raw Materials for Making Porcelain and the Characteristics of Porcelain Wares in North and South China in Ancient Times," *Archaeometry* 29, no. 1 (1987):3-19.

123

important sites of collection, with port city artisans and potters reproducing and rebranding trade route materials into new forms.

To understand the aesthetic and pharmaceutical impact of newly-developed, Asian-inspired Islamic wares on global medical and material culture, an analysis must first be made of their origins at sea. Foreign medicines were domesticated from raw, unfamiliar substances into familiar objects of cultural practice by utensils that changed plant and animal parts into therapeutic, consumable ingredients. Storage jars, cooking pots, kendis, bowls, cups, beakers, and censors fashioned medicine into bodily practices that appropriated foreign materials into digestible categories and recipes.

An Italian pharmacy jar, <sup>451</sup> or *albarello*, produced in 1515 and housed at the Metropolitan Museum of Art, is glazed in white and decorated with brilliant orange and blue. Below the lip of the jar, low enough to not be concealed by the parchment, leather, or paper <sup>452</sup> that would have been tied on top as a label and seal, sits a bright orange band of repeating Buddhist endless knots. <sup>453</sup> This Buddhist motif was inspired by other trade goods imported from the East, but the white-tin glaze on the jar was characteristic of all European maiolica wares which attempted to recreate the iconic look of white Chinese porcelains using techniques borrowed from medieval Islamicate potters. This method of capturing the whiteness of porcelains produced near China's seaports would ripple through *faience*, delftware, Iznik, and *talavera* ceramics produced around

<sup>&</sup>lt;sup>451</sup> Object 23.166

<sup>&</sup>lt;sup>452</sup> Reginald George Haggar. *Concise Encyclopedia of Continental Pottery and Porcelain*. New York: Hawthorn Books. 1960, 23

<sup>&</sup>lt;sup>453</sup> International Association for the History of Glass. Koen H. A. Janssens, Patrick Degryse, eds. *Annales Du 17e Congrès D'Associationi Internationale Pour L'histoire Du Verre.* Asp/Vubpress/Upa, 2009:525.

the world, and white ceramics would become forever entwined with the visual symbolism of safe pharmacy practice. But the ground zero for the imitation of porcelain's whiteness outside of China, where it first began, was in the Near East. As maritime products from China and Southeast Asia flooded the ports of the Persian Gulf, the material culture of Islamicate medicine would never be the same.

The shape of the European albarello medicine jar was also an import from the Middle East. Albarelli are cylindrical with slightly narrowed waists, a functional flourish that allowed apothecaries to grip them more easily from pharmacy shelves crowded by the influx of foreign herbs. Scholars like Christopher Steiner have asserted that European collecting was, in part, "born out of a need or desire to create order out of the material debris of culture contact ... [since] the Age of Discovery."454 As new materials and information entered Europe, it all had to be intellectually and physically organized into categories and sites that rendered it locally comprehensible and usable. The storage vessels, like *albarelli*, created and adapted to house new materials into collections, culturally domesticated imported, foreign flora and fauna into recognizable and functional medical ingredients while retaining an aura of the exotic. This facet of European intellectual and material history has been discussed by scholars in relationship to the development of private collections and museums of natural history and anthropology, but early modern European collecting began on the coattails of Islamic expansion, exploration, and exchange in the Indian Ocean and beyond. Generations of Muslim drug merchants and sailors got to the "spice islands" and the rest of Southeast Asia and China, not to mention India,

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 $<sup>^{454}</sup>$  Christopher B. Steiner, "Museums and the Politics of Nationalism," *Museum Anthropology* 19, no. 2 (1995):4.

centuries before Vasco de Gama rounded the Cape of Good Hope. Pharmacies in the Persian Gulf region were, therefore, a primary site of collection and adaptation of foreign objects and medicines long before Italian apothecary shelves and elite European collections began acquiring replicas of their materials. *Albarelli* from tenth- through fourteenth-century Iran and Syria did the cultural work of domesticating novel medicines from China, Southeast Asia, and India on Western shelves, and these vessels were only the newest medieval flowering of a Persian Gulf drug trade across the Indian Ocean that dated back all the way to antiquity.<sup>455</sup>

The *albarello* form appeared along the tenth- and eleventh-century Euphrates River region, with numerous Persian and Syrian examples surviving in global museums. The shape of these jars is said to mimic the segmented bamboo medicine containers Muslim sea merchants encountered in Indonesia and the Far East. The origin of the name *albarello*, itself, has also been connected back to Muslim maritime engagement with the East, with competing etymological theories reaching across the expanse of the trade routes. One theory purports that the name arose in Europe, derived from the Latin word for white, *albus*, due to the tin-glazed white surfaces made in imitation of Muslim copies of Chinese porcelain, or from the word *albarius*, referring to the

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<sup>&</sup>lt;sup>455</sup> Anya King has made a brilliant study of Sasanian origins of many Arabic drug names. See Anya King, "The New Materia Medica of the Islamicate Tradition: The Pre-Islamic Context," *Journal of the American Oriental Society* 135, no. 3 (2015): 499-528.

<sup>&</sup>lt;sup>456</sup> "Drug Jar (albarello)," Seattle Art Museum, <a href="http://art.seattleartmuseum.org/objects/21044/drug-jar-albarello;jsessionid=B7393F5DF9DB3C595B2886E4A1B9F268">https://art.seattleartmuseum.org/objects/21044/drug-jar-albarello;jsessionid=B7393F5DF9DB3C595B2886E4A1B9F268</a>; Bamboo medicine jars are seen in contemporary Indonesia, as in the Sumba jars displayed in the David Alan Gallery exhibit, *Balancing the Universe: Shamanic Talismans, Instruments and Costumes*, <a href="https://thedavidalancollection.com/2018/07/13/shamanic-talismans-amulets-healing-and-ritual-power-objects-tribal-indonesia-continued/">https://thedavidalancollection.com/2018/07/13/shamanic-talismans-amulets-healing-and-ritual-power-objects-tribal-indonesia-continued/</a>. Inscribed Bamboo tubes are also used in Sumatra as mediums for Batak medical texts, amulets, and possible drug storage. See University of Michigan Museum of Anthropological Archaeology: <a href="https://webapps.lsa.umich.edu/umma/exhibits/Batak2009/catalog.html">https://webapps.lsa.umich.edu/umma/exhibits/Batak2009/catalog.html</a>; Bamboo cups are also an important part of Traditional Chinese Medicine moxibustion and cupping practices.

act of whitening, itself, or even from the word, *alveolus*, for "vessel." Another theory asserts that the term *albarello* comes from an Arabic word for container. The Arabic word *baran*<sup>458</sup> means dust or earth, and *barrniya*<sup>459</sup> refers to a clay vessel. The Persian words *barn*, 460 *barnī*, 461 and *barani*<sup>462</sup> each refer to medicine storage jars or broad-mouthed vessels made of earth or metal, rendering *al-barani* as drug jars. 463 To further complicate matters, the Arabic word *bari'a* a<sup>464</sup> means to cure or heal, and yet another conflicting theory purports that the word *albarello* derives from a word meaning bamboo. 465,466

Regardless of the origin of the name, the functional and visual traits of *albarelli* were meant to signal a direct connection to the East for both their Islamicate, and later, European producers.<sup>467</sup>

<sup>&</sup>lt;sup>457</sup> Sheila R. Canby, et al, *Court and Cosmos: The Great Age of the Seljuqs* (New York: Metropolitan Museum of Art, 2016) 325.

<sup>&</sup>lt;sup>458</sup> Hans Wehr, *Dictionary of Modern Written Arabic, 4th Edition.* (Ithaca: Spoken Language Service, 1979) 70.

 $<sup>\</sup>frac{\text{http://ejtaal.net/aa/\#hw4=83,ll=38,ls=1,la=1,sg=20,ha=21,br=26,pr=9,aan=24,mgf=33,vi=51,kz=10,mr=25,mn=1,uqw=106,umr=26,ums=14,umj=34,ulq=247,uqa=17,uqq=2,bdw=h19,amr=h7,asb=h17,auh=h37,dhq=h2,mht=h6,msb=h8,tla=h8,amj=h22,ens=h1,mis=h1}$ 

<sup>&</sup>lt;sup>459</sup> Ibid, 68

برن 460

برنى 461

برانی <sup>462</sup>

<sup>&</sup>lt;sup>463</sup> Francis Joseph Steinglass, *A Comprehensive Persian-English Dictionary Including the Arabic Words and Phrases to be Met with in Persian Literature* (London: Routledge and K. Paul, 1892) 169, 179, 180. <a href="https://dsal.uchicago.edu/dictionaries/steingass/">https://dsal.uchicago.edu/dictionaries/steingass/</a>

<sup>&</sup>lt;sup>464</sup> Wehr, 62.

<sup>&</sup>lt;sup>465</sup> Seattle Museum of Art. "Drug Jar (Albarello)." <a href="http://art.seattleartmuseum.org/objects/21044/drug-jar-albarello;jsessionid=B7393F5DF9DB3C595B2886E4A1B9F268">http://art.seattleartmuseum.org/objects/21044/drug-jar-albarello;jsessionid=B7393F5DF9DB3C595B2886E4A1B9F268</a>; see discussion of *al-barani*, bamboo, in Cosman, Madeleine Pelner and Linda Gale Jones, *Handbook to Life in the Medieval Middle Ages* (New York: Infobase Publishing, 2009) 570.

<sup>&</sup>lt;sup>466</sup> A Persian word for bamboo, *bans* (Steinglass, 152 (بانس)), derives from the Sanskrit pharmacological term *vansa* (Ibid), and is associated with the extremely popular medieval trade route medicines *ban* (Ibid (بان)) or myrobalan, which was a source of benzoin resin, among other drugs, and *tabashir* (بان), *vansa sarkara* or *tavakshira*), which is the extract or "sugar" of bamboo joints (Henry R. Strong, ed. "Bamboo Manna," *The National Druggist 30, no. 1* (1990): 285.

https://play.google.com/books/reader?id=PWrnAAAAMAAJ&hl=en&pg=GBS.PP1; Steinglass, 1892, 808. 467 See examples of Italian *albarelli* at the Metropolitan Museum of Art featuring turbaned figures and faux-Arabic: Accession numbers 02.5.20, 02.5.21,1975.1.1048, 32.100.375, 11.130.3.

Early modern *albarelli* produced in Spain and Italy, and later in Britain and the Netherlands, helped shape how materials from the spice routes entered the European imagination and how imported foreign medicines and herbs were consumed and understood. The blending and mimicry in Europe of Islamic and Asian ceramic forms and designs on pharmacy jars reflected the exotic commercial origins and supply chains of the drugs stored inside. Apothecaries, spice merchants, and physicians gained not only a surge of foreign ingredients to add to their prescriptions from the influx of products from the East, but also a potent form of visual branding in their packaging that linked their wares and expertise to the exotic outer reaches of the globe.

## **Materiality of Medicine**

Premodern medical objects, like the shipwreck artifacts discussed in this chapter, often find their way into art collections where they are evaluated for their aesthetics, but not for their functions over lifetimes of use. When analyzed as "art" that is somehow separate from daily life, their meanings in the lives of the people who used them are lost. The premodern medical objects discussed in this chapter provide an important window into the material culture of the body and function, at times, as extensions of the body. Used for imbibing food, medicine, wine, the compounding and brewing of drugs, the safe storage and shipping of remedies over vast, oceanic distances, these vessels mediate the bodily relationship with ingredients and pharmacological substances. You cannot experience a medicine without experiencing a ceramic, metal, or glass container, a bowl, a cup, a kendi, a censor, with each object enabling and organizing your experience of healing. The aesthetics of healing matter a great deal, humoral medicine is a sensory experience that is rendered efficacious by its sensory qualia of heat, cold, wetness and dryness. Pharmacological treatment in the medieval Islamicate world functioned like curation, a

balancing of the basic substantive qualia which must exist in balance within the body: a lack of something, like heat, required collecting more of it to rebalance the humors, an excess required purging and deaccession. A parallel curation and collecting was required for medical objects.

In premodern Islamicate medicine, medical objects like bowls, jars, beakers, and kendis were understood to be healing agents in their own right, not just the utensils used to prepare and consume remedies. The Qur'an describes Allah's creation of man as the moulding of an earthenware vessel: "He created man from clay like [that of] pottery." The earth, water, air, and fiery heat of the sun or kiln that form earthen vessels are the same elements that form the human body in Islamicate medicine. And like ceramic vessels, the humoral body contains substances that combine to nourish life. The medical analogy of the body as a vessel extends even further into the semantics of *tibb* (طب), Islamic medicine. *Tibb*, the word, from Arabic, for the practice of medicine, is a synonym for the binding of a reinforcement strap to the weak seams of a sewn, leather water-bottle. Human beings, as living vessels made of vulnerable skin, require the shoring up and protection of skilled physician-craftsmen to safeguard our health. The vessels we use to consume healing remedies are symbolic of our own elemental creation.

Including medical material culture in the analytical frame of pharmacology better reveals medical ontologies of the past by challenging our assumptions about what is a healing agent and how. In a humoral framework, a ceramic vessel that is, itself, well-balanced by its creation from earth, water, fire, and air will aid the rebalancing of human beings whose elemental qualia have

<sup>&</sup>lt;sup>468</sup> Qur'an 55:14

<sup>&</sup>lt;sup>469</sup> Steinglass 1892: 808

run amok. A jar that protects vulnerable medicines from excessive moisture is not just clever packaging or marketing, it is, itself, acting therapeutically to preserve the essential qualities and elemental balance of herbs.

The vessels that contain medicines are often viewed as therapeutic in Traditional Chinese Medine, as well. During the Ming Dynasty (1368-1644 CE), Li Shizhen distilled the accumulated pharmacological knowledge of the past into what has become the master *materia medica* of Chinese Medicine, the *Bencao Gangmu* (BCGM). The BCGM lists every imaginable genre and taxonomy of drug, plant, mineral, and animal product that can be utilized for healing, and prescribes their constituent parts into a vast repertoire of recipes. One section of the BCGM lists utensils, things themselves, as drugs, as therapeutic agents in their own right. This is surprising to a modern sensibility that divides *things that heal* into two categories: drugs, regarded as active agents and influencers of cause and effect, and instruments, things that passively enable the efficacy of greater powers. But the examples of utensils as drugs, as active agents of healing, in the BCGM regard the instruments as both constituent ingredients in medicinal recipes and indispensable actors in their own right on right and rope are all also identified. The mechanisms of therapeutic efficacy are multiple in these cases, combining sympathetic magic with elemental systems of correspondence and balance.

<sup>&</sup>lt;sup>470</sup> Li Shizhen. *Bencao Gangmu (BCGM)*. Luo Xiwen, trans. (Beijing: Foreign Languages Press, 1593 (2003)), 3291-92, Drug 38-55 *Yanzhushichui* 

<sup>&</sup>lt;sup>471</sup> Ibid 3292, Drug 38-56 *Dengzhan* 

<sup>&</sup>lt;sup>472</sup> Ibid 3294, Drug 38-59 *Baichuanru* 

<sup>&</sup>lt;sup>473</sup> Ibid 3296

<sup>&</sup>lt;sup>474</sup> Ibid 3297

What makes up a medicinal recipe is its material ingredients, their interrelationships, their origins, the materials of its production, and its purpose in the alleviation of suffering. This analytical framework comes from the Aristotelian thought that inflected Persianate medicine in the medieval period, when to understand a thing like suffering or healing or an ingredient, one had to first understand its cause. Aristotle writes:

'Cause' means (1) that from which, as immanent material, a thing comes into being, e.g. the bronze is the cause of the statue and the silver of the saucer... (2) The form or pattern, i.e. the definition of the essence... (3) That from which the change or the resting from change first begins... (4) The end, i.e. that for the sake of which a thing is; e.g. health is the cause of walking. For 'Why does one walk?' we say; 'that one may be healthy' ... The same is true of all the means that intervene before the end, when something else has put the process in motion, as e.g. thinning or purging or drugs or instruments intervene before health is reached; for all these are for the sake of the end, though they differ from one another in that some are instruments and others are actions.<sup>475</sup>

The cause of healing is a medicine or an action, the cause of a medicine or an action is its component parts or ingredients, the cause of the ingredients are their elemental natures. In describing these elemental natures, Shah explains that "elements are equivalent to *arkaan*- first principles of *Physics*. Elements are not matter but abstractions adopted for symbolizing qualities of mass and energy." The constitution (*tabbiyat*) of a thing is "comprised of seven physical factors—*amoor-e-tabbaiya* of which temperament—*mizaj*—is one."

Medical materials in the Islamicate world reveal a productive space for thinking through the materiality of medicine. Materiality in humoral medicine is infused by the abstractions of the

<sup>&</sup>lt;sup>475</sup> Aristotle, Metaphysics V, 2

<sup>&</sup>lt;sup>476</sup> Shah 1966:22

<sup>477</sup> Shah 1966:xviii

elements manifest through the physical qualia of heat, cold, wetness, and dryness, and further revealed by symptoms within the basic substances of the body: blood, phlegm, yellow bile, and black bile. Every pharmaceutical ingredient, likewise, has its own elemental nature that can combine with the qualia of an ailing body to reduce or increase heat, cold, wetness or dryness that might be out of balance and causing disease. Medical instruments are equal citizens of this cosmology and also possess their own elemental fingerprints which structure therapeutics. As icons of the balance between the elements, ceramics have a unique role as agents of healing.

An example of the agency of therapeutic objects that is particularly effective for its overt power is the Near Eastern magic bowl. Often called demon bowls, incantation bowls, or Islamic medicine bowls in museum collections, these objects predate Islam but remained popular under Muslim rule. As discussed in Chapter two, the bowls are typically inscribed with words and images that directly impacted the body and soul when the contents were ingested. The novelty of these objects often garners special attention in exhibits where they are displayed, but I suggest that their agency was merely an overt form of the agency of all materials of medicine. Bowls and jars were not neutral, passive observers of healing and disease, they were understood to be active agents and participants.

It is impossible to describe the spices and medicines that circulated across the maritime trade routes without also examining the storage containers and utensils that enabled their shipment,

<sup>&</sup>lt;sup>478</sup> S. Shaked, J.N. Ford and S. Bhayro, *Aramaic Bowl Spells: Jewish Babylonian Aramaic Bowls Volume One* (Magical and Religious Literature of Late Antiquity 1; Leiden: Brill, 2013)

preparation, and use. I foreground my discussion of trade route medicine with an inventory of medical vessels that have been recovered from the seafloor.

# **Inventory of Cargoes**

Developments in high-fired ceramic technology in China during the Tang and Song dynasties enabled the safe storage and shipping of both dry and liquid medicines over longer distances and with longer shelf-lives upon arrival. Higher-fired ceramics are less porous and more watertight, better protecting the drugs inside. The look of high-fired, durable wares was replicated by artisans outside of China in a myriad ways, and in medical contexts signaled not just the possession of prestige goods from exotic locations, but the pharmacological safety associated with high-fired stonewares, celadons, and porcelains. These objects were not just beautiful, but associated with durability, freshness, and the detection of poisons. In what is believed to be the earliest reference to Chinese porcelain in a Western language, al-Sirafi, writing in the tenth century, describes "a fine type of clay that is made into cups as delicate as glass: when held up to the light, any liquid in them can be seen through the body of the cup, even though it is of clay."<sup>479</sup> Porcelains and celedons were believed, in the Islamic world, to detect poisons.<sup>480</sup> This would have had enormous commercial benefit for merchants sailing home from China and Southeast Asia with boats filled with unfamiliar, exotic drugs and cargoes full of ceramics. For potential buyers weary of dangers from foreign medicines, merchants were ready-at-hand to sell prophylactic storage containers, cups, and bowls to assuage any fear. Shards of thirteenth- and

<sup>&</sup>lt;sup>479</sup> al-Sirafi, Abu Zayd. Tim Mackintosh-Smith, trans. *Accounts of China and India*.(New York: New York University Press, 2014), 45.

<sup>&</sup>lt;sup>480</sup> Miksic, John N. *Southeast Asian Ceramics: New Light on Old Pottery*. (Singapore: Southeast Asian Ceramic Society, 2009), 99; Jay A. Levenson, ed. *Circa 1492: Art in the Age of Exploration*. (New Haven: Yale University Press, 1991),132.

fourteenth-century Chinese celadons have been found in great numbers in coastal regions of Iran, most popularly, the lotus bowl, which embodied the Buddhist symbol of purification.<sup>481</sup>

The structurally protective qualities of ceramic jars are responsible for the survival after shipwreck of many samples of organic medicines and smaller bowls and cups that were shipped inside them. In addition to the physical evidence of this shipping practice from multiple wrecks described in this chapter, a tenth-century written account survives in the second book of al-Sīrāfī's Accounts of China and India. While discussing the merits of Tibetan versus Chinese shipping methods for musk, al-Sīrāfī chastises Chinese merchants for ineffective storage methods that exposed musk to moist vapors at sea. He asserts that if they would just preserve the musk intact inside the pod and package it inside al-barani (البراني), ceramic drug jars, before setting out to sea, the musk would retain its quality and freshness. This was, ostensibly, the practice of Persian merchants, and is borne out by the archaeological record.

Drug jars come in many sizes and shapes. The ninth-century Belitung wreck, which sank off the coast of an Indonesian island on it's return trip to the Persian Gulf from China, contained a large assortment of different styles and sizes of ceramic shipping containers. Many large, medium, and small green-glazed stoneware jars were recovered from the wreckage, some inscribed in Arabic.<sup>483</sup> The Arabic-inscribed storage jars resemble fragments of other ninth-century, Dusun-

<sup>&</sup>lt;sup>481</sup> Peter Morgan, "New Thoughts on Old Hormuz: Chinese Ceramics in the Hormuz Region in the Thirteenth and Fourteenth Centuries," *Iran* 29 (1991):

<sup>&</sup>lt;sup>482</sup> al-Sirafi 2014:104-105

<sup>&</sup>lt;sup>483</sup> Flecker, Michael, "A Ninth-Century Arab Shipwreck in Indonesia: The First Archaeological Evidence of Direct Trade with China," in Shipwrecked: Tang Treasures and Monsoon Winds, eds. Regina Krahl, John Guy, J. Keith Wilson, and Julian Raby (Washington, DC: Smithsonian Books, 2010), 107.

style storage jars excavated from the foundation of the Great Mosque in Siraf. 484 Likely produced near the port of Guangzhou, this type of heavy stoneware container has also been found in significant quantities in Palembang and Java, and in modern times is referred to as a Martaban jar after a main port of redistribution of the jars. These jars became trade goods in their own right, sometimes valued for their practical utility for household water storage and otherwise as local prestige or ritual objects and heirlooms. 485 Many large Guangdong storage jars in the Belitung stowage were packed with lead ingots and hundreds of bowls. 486 Archaeologist Michael Flecker theorizes that the presence of many empty storage jars of this type on the vessel implies "that they originally held liquid or perishable goods." A large, green-glazed jar with a spout recovered in this grouping almost certainly held a large quantity of liquid, and many smaller, handled jars of this type also had spouts. Several of the smaller Guangdong jars contained star anise which had survived underwater for over a thousand years, a powerful demonstration of the effectiveness of high-fired ceramics in drug packaging. 488

Several double-handled, turquoise-glazed Middle Eastern jars were also in the Belitung stowage, and they closely resemble other turquoise jars recovered from the Chinese coast that were used to ship dates, syrup, and wine. Other jars onboard, like large, lidded, green-splashed ware and

<sup>&</sup>lt;sup>484</sup> Guy, John, "Rare and Strange Goods: International Trade in Ninth-Century Asia," in Krahl, et al 2010: 21-22.

<sup>&</sup>lt;sup>485</sup> Guy in Krahl, et al 2010: 21-22; Martaban Storage Jar, Minneapolis Museum of Art, <a href="https://collections.artsmia.org/art/81317/martaban-storage-jar-china">https://collections.artsmia.org/art/81317/martaban-storage-jar-china</a>; Miksic 2009:98; Pamela Gutman, "The Martaban Trade: An Examination of the Literature from the Seventh Century until the Eighteenth Century," *Asian Perspectives* 40, no. 1 (2001) 108:118.

<sup>&</sup>lt;sup>486</sup> Krahl 2010:52-55; Flecker in Krahl et al 2010: 108-110

<sup>&</sup>lt;sup>487</sup> Flecker in Krahl et al 2010:110

<sup>&</sup>lt;sup>488</sup> Flecker in Krahl et al 2010:110

<sup>&</sup>lt;sup>489</sup> Guy in Krahl 2010:25; Hallett, Jessica, "Pearl Cups like the Moon:The Abbasid Reception of Chinese Ceramics," in Krahl, et al 2010:78.

lobed jars from the Changsha kilns were produced for the Persian Gulf market. 490 Of great significance to the influence on Gulf medical material culture of Chinese ceramics were the Chinese white wares found at the wreck site. White jars from the historic Gongxian kilns were recovered from the Belitung cargo. 491 Exported ceramics from the Ding, Xing, and Gongxian kilns were the inspiration for the first imitation white wares created in the Middle East by potters in Basra, with their choice of forms explicitly mimicking pieces from the Gongxian kilns. 492 This evidence of a direct connection between the cargo of a ship loaded with ceramics from China, including Gongxian white wares, and the port of Basra in the ninth-century is even more significant because the Belitung cargo also contained Gongxian blue and white wares that strongly resemble similar pieces produced at Basra. 493

A century after the Belitung ship sank beneath the waves of the Java Sea, another trade vessel, now known as the Intan ship, wrecked in waters not far to its south. The tenth-century cargo of the Intan vessel demonstrates great continuity with the shipping practices of the Belitung, though the intended scales of their journeys were quite different. Southeast Asia was the gateway for maritime trade between China and the Middle East, and an important entrepot for crews from across the sea routes. The Belitung ship's construction and cargo make clear that it originated in the Persian Gulf and was headed back to Basra from China. The Intan vessel, however, likely took on its cargo of mixed goods in an entrepot in southeastern Sumatra en route to a destination in Java.<sup>494</sup> Several large, brown/green Guangdong-style storage jars with lug handles were

<sup>&</sup>lt;sup>490</sup> Krahl 2010: 64, 250-252

<sup>&</sup>lt;sup>491</sup> Krahl 2010: 72, 260-261

<sup>&</sup>lt;sup>492</sup> Hallett in Krahl, et al 2010:72,77

<sup>&</sup>lt;sup>493</sup> Ibid 80

<sup>&</sup>lt;sup>494</sup> Flecker 2002: 122.

recovered from the wreckage of the Intan stowage, as well as rounded jars with spouts for storing liquids.<sup>495</sup> The shards of at least four incised, turquoise Persian storage jars were also recovered. Flecker deduces from their small number that they were being used to ship trade goods stored inside.<sup>496</sup>

Like the Belitung ship, the Intan vessel also carried high-quality Chinese white wares. In addition to bowls, cups, bottles, covered boxes, and ewers, the Intan cargo contained white jars. A number of small Yue-type jars were also onboard, including many with incised lotus designs, with one, in particular, featuring a neck segmented in imitation of bamboo. This visual vocabulary of both bamboo and lotus on imitation wares in the Middle East would remain important for centuries in medical contexts, shaping the forms of *albarello* drug jars and the motifs on Islamic-produced fritwares.

During the Southern Song period, a trading vessel dated to the twelfth or thirteenth century left port from southern China loaded with 31,000 pieces of ceramics. The ship sank off the coast of Pulau Buaya island, south of Singapore, likely on its way to Sumatra. A great many large Guangdong storage jars were recovered from the wreck, along with several smaller examples. Almost all of the ceramics onboard were high-fired stoneware, including many small pots and jars. Also sailing from China during the reign of the Southern Song, likely from the port of

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<sup>&</sup>lt;sup>495</sup> Flecker 2002:116

<sup>&</sup>lt;sup>496</sup> Ibid 103, 118

<sup>&</sup>lt;sup>497</sup> Ibid 113-114

<sup>&</sup>lt;sup>498</sup> Ibid 104

<sup>499</sup> Ridho and McKinnon 1998: iii, v.

<sup>&</sup>lt;sup>500</sup> Ibid 52-59

<sup>&</sup>lt;sup>501</sup> Ibid 25-29, 48-51

Ouanzhou in the twelfth century, was the Java Sea Shipwreck. 502 Eighty Guangdong-style storage jars in various sizes, each with four strap handles attached at the top, were recovered from the wreck. <sup>503</sup> Another eighty squat, narrow-mouthed storage jars, eight small, bulbous jars, four mercury jars, a brown-glazed jarlet, likely made in Quanzhou, a small utilitarian jar, and a few individual finer jars, one with qingbai glaze and one painted ware, were also onboard.504

The sheer number of storage jars recovered from the Java Sea Wreck demonstrates the massive quantities of perishable medicines and other commodities moving on the water during this time. Zhao Ruguo, the supervisor of maritime trade at the port of Quanzhou in the early thirteenth century, recorded his observations of the herbs, medicines, and exotic products coming into Quanzhou during his time there, and the stories of foreign people and places he heard circulating through the city. He describes forty-three foreign products ranging from ambergris to oakgalls coming into port in Quanzhou from fifty-three exotic lands. 505

## **Drugs**

Under circumstances that are not understood, either by sinking while docked at Quanzhou's Houzhu Harbor or by being abandoned there, a thirteenth-century boat full of medicines was lost

<sup>&</sup>lt;sup>502</sup> Mather and Flecker 1997; Niziolek, Lisa C., Gary M. Feinman, Jun Kimura, Amanda Respess, and Lu Zhang, "Revisiting the Date of the Java Sea Shipwreck from Indonesia," Journal of Archaeological Science: Reports 19 (2018): 781-790.

<sup>&</sup>lt;sup>503</sup> Ibid 169

<sup>&</sup>lt;sup>504</sup> Ibid 127, 148, 165-171

<sup>&</sup>lt;sup>505</sup> Zhao Ruguo. *Zhufan Zhi*. Friedrich Hirth and W.W. Rockhill, trans. (St. Petersburg: Imperial Academy of Sciences, 1911).

and covered over by over two meters of sediment. 506 The wreckage of the Quanzhou Boat represents an unprecedented find of premodern drugs. Workers dredging the harbor in 1973 discovered the boat, and archaeologists gradually excavated intact remnants of almost twenty varieties of drug ingredients.<sup>507</sup> The wreck contained 2350 kilograms of aromatics, including fragrant woods, incense, sandalwood, and gaharu wood, 7.5 kilograms of pepper (fructis piperis), 51 betel nuts (areca catechu), 6.3 grams of frankincense, 1.1 gram of ambergris, 4.6 grams of cinnabar, 385 grams of mercury, one tortoise shell, 53 peach seeds, two prune seeds, five plum seeds, 14 coconut shells, eight coconut seeds, one ginkgo nut, 11 litchi seeds, 2286 clam shells, and .03 grams of an unknown yellow substance. <sup>508</sup> The cargo also contained one wooden container, 34 pieces of pottery, 24 porcelain vessels, and 94 wooden product labels.<sup>509</sup> The multitude of empty jars recovered from the Java Sea Wreck, which also sailed under the Southern Song, likely contained similar medicinal goods. A few organic materials did survive the wreck and have been discussed by this author and Niziolek elsewhere.<sup>510</sup> Unidentified wooden branches used either as dunnage or aromatics were recovered from the wreck, as were eight pieces of medicinal resin.<sup>511</sup> Other surviving plant materials at the wreck site were canarium nuts and nipa palm fruit.<sup>512</sup> A few unworked elephant tusks from the cargo were

<sup>&</sup>lt;sup>506</sup> Jun Kimura. Archaeology of East Asian Shipbuilding. (Gainesville: University of Florida Press, 2016),

<sup>&</sup>lt;sup>507</sup> Ibid 70

<sup>&</sup>lt;sup>508</sup> Ibid 250-252

<sup>&</sup>lt;sup>509</sup> Ibid

<sup>&</sup>lt;sup>510</sup> Respess, Amanda and Lisa C. Niziolek, "Exchanges and Transformations on the Maritime Silk Road: Evidence from the Java Sea Wreck," in Histories of Medicine and Healing in the Indian Ocean World. (New York: Palgrave MacMillan, 2016). 511 Mathers and Flecker 1997:93, 81-82

<sup>&</sup>lt;sup>512</sup> Ibid 94

recovered, and the context of their pharmacological implications is also discussed elsewhere by this author and Niziolek.<sup>513</sup>

The tenth-century Intan vessel contained still-fragrant resin that had been widely-dispersed across the wreck site. Flecker theorizes that because of the low specific gravity of resin, any in the cargo that was "not immediately buried" in wreckage would have drifted away on the current.<sup>514</sup> A similar dynamic occurred with the hundreds of candlenuts onboard.<sup>515</sup> One elephant tusk and four pieces of worked ivory were recovered, with Flecker pointing out its perceived value for poison detection.<sup>516</sup> An elephant tooth, tiger teeth and bones, sambar antler, and five unidentified animal teeth were also found.<sup>517</sup>

In the wreckage of the ninth-century Belitung vessel, resin, spice pods, amber, nuts, lime, a white "aluminum-rich substance," and multiple jars of star anise (*illicium verum*) were recovered. The presence of so much star anise in a cargo destined for Basra presents a useful example of how a novel Chinese and Southeast Asian drug might be translated into Persian use. Star Anise is native to what is now southwestern China and Vietnam, a region known as *Guihai*, the Cinnamon Sea, for its abundant growth of spices and medicines. During the ninth century this region, which was home to many non-Chinese groups, was an uneasy and unstable frontier. Star Anise

<sup>&</sup>lt;sup>513</sup> Ibid 81; Respess and Niziolek 2016

<sup>&</sup>lt;sup>514</sup> Flecker 2002:30, 96-97

<sup>&</sup>lt;sup>515</sup> Flecker 2002: 92-93

<sup>&</sup>lt;sup>516</sup> Ibid 30, 95

<sup>&</sup>lt;sup>517</sup> Ibid 7, 24, 30, 94; Flecker points out the use of tiger in traditional Chinese medicine as an aphrodisiac

<sup>&</sup>lt;sup>518</sup> Flecker in Krahl, et al 2010: 111, 114, 230-231

<sup>&</sup>lt;sup>519</sup> Hargett, James M "Introduction," in Fan Chengda, *Treatises of the Supervisor and Guardian of the Cinnamon Sea.* James Hargett, trans. (Seattle: University of Washington Press, 2010), xxi-xxv.

In the *Bencao Gangmu*, Li Shizhen categorizes star anise with the similarly-acting fennel, *huaixiang*, though carefully distinguishing its appearance and origin. He distinguishes between native fennel and imported star anise, calling it *bo huixiang* (imported fennel) or *ba jiao huixiang* (eight-pod fennel). He explains that even though the plants come from different places and look radically different, "they have the same quality and taste." This fragrant quality on the tongue comes from the chemical compound, anethole, which also occurs in fennel and aniseed (*pimpinella anisum*). Persian drug classifiers used the same strategy to characterize the novel star anise, giving it the same name as fennel, *badian* (بلديان). This classificatory strategy also played out in previous terminology for aniseed and fennel, which were confused in Akkadian and Greek sources.

The qualities shared by fennel and star anise in Chinese medicine made it an effective agent for dispelling cold, alleviating pain, regulating *qi*, and treating stomach ailments and skin inflammation.<sup>523</sup> The fennel and aniseed familiar to Persian merchants had similar effects.

Aniseed is native to the Mediterranean region, Near East, and parts of South Asia, and in traditional Islamicate medicine is characterized as warm and dry.<sup>524</sup> It is a common treatment for

<sup>&</sup>lt;sup>520</sup> Li Shizhen 1593 (2003): 2541

<sup>521</sup> lbid

<sup>522</sup> lbid

<sup>&</sup>lt;sup>523</sup> Wang Guo-Wei, Hu Wen-Ting, Huang Bao-Kang, Qin Lu-Ping, "Illicium Verum: A Review on its Botany, traditional Use, Chemistry, and Pharmacology," *Journal of Ethnopharmacology* 136, no 1 (2011):10-20.

<sup>&</sup>lt;sup>524</sup> Sun Wenli, Mohamad Hesam Shahrajabian & Qi Cheng "Anise (Pimpinella Anisum L.), A Dominant Spice and Traditional Medicinal Herb for both Food and Medicinal Purposes," *Cogent Biology* 5, no 1. (2019); Shojaii, Asie and Mehri Abdullah Fard, "Review of Pharmacological Properties and Chemical Constituents of Pimpinella Anisum," *ISRN Pharmaceutics* (2012).

digestive issues in adults and, in infants, through the effect retained in breastmilk.<sup>525</sup> Star anise is taken up in Islamicate cuisine in a similar fashion to its use in China as a flavouring and digestive aid. In the tenth-century collection, *Kitab al-Tabikh wa-Islah al-Aghdhiyat al-Ma'qulat*, what is believed to be the earliest surviving cookbook in Arabic, star anise is recommended as an ingredient for the preparation of lamb and chicken.<sup>526</sup>

## **Cabinets of Curiosity**

I have argued in this dissertation that the premodern, humoral body was a primary site of collection, a living and breathing collection of substances, qualia, and drugs that constituted cosmopolitan Persianate personhood. The body was the primary curiosity cabinet of long-distance trade. Historian Carla Nappi describes the *Bencao Gangmu* as a "textual cabinet of natural curiosities," situating its author, Li Shizhen, in a tradition of natural history and collecting outside of the West. The pharmacological taxonomies and ingredients of the trade routes found their way into premodern and early modern medical texts. These books performed a function, like the *wunderkammer*, of domesticating foreign wonders, but they were not the only objects to do so.

The shipwrecked medical objects so far catalogued in this chapter have primarily dealt with the storage, preservation, and shipment of drugs over vast distances at sea. But as illustrated by the cultural work accomplished by *albarelli* in rendering foreign drugs legible once they have come

<sup>&</sup>lt;sup>525</sup> Ibic

<sup>&</sup>lt;sup>526</sup> Paul Buell and Eugene Anderson. *A Soup for the Qan: Chinese Dietary Medicine of the Mongol Era as Seen in Hu Szu-Hui's Yin-Shan Cheng-Yao.* (London: Routledge, 2000), 75. <sup>527</sup> Nappi 2009:7.

ashore, another class of utensils was required by pharmacists, physicians, and consumers once the large Guangdong storage jars of herbs were unloaded by merchants arriving at the harbor.

The Belitung vessel was loaded with covered medicine boxes, incense burners, cast iron cauldrons and vessels, copper-alloy bowls, and kettles for private use. <sup>528</sup> Celadon tea utensils, a tiny blue glass bottle filled with an unidentified material, ewers and over 57,000 bowls were also recovered from stowage. <sup>529</sup> All of these objects mediated drugs for ingestion, to be eaten, drunk, steamed, smoked, burnt, fumigated, washed with, rinsed, or rubbed into the skin.

7,309 ceramic pieces were recovered from the Intan vessel, including green-glazed Yue-type ewers, bowls, cups, dishes, covered boxes, bases, and lids, qingbai covered boxes and bowls, and Guangdong-style brown/green large mouthed pots, basins, and a bottle.<sup>530</sup> Fine paste Thai bottles, kundikas, and kendis and small Guangdong "utilitarian" high-fired pots were discovered. Ten grindstones, two stone rollers, five stone pestles, 144 fragments of glassware, three cast iron pots, copper alloy mortars and pestles, and a black, clay crucible were also found.<sup>531</sup> The Java Sea Wreck contained hundreds of painted, celedon, qingbai, and brown- and green-glazed bowls, ewers, wine pots, covered boxes, and bottles as well as 360 Thai kendis and kundikas, a hookah and hookah fragments, rice pots, multiple iron cauldrons, and fragments of glass containers.<sup>532</sup>

<sup>&</sup>lt;sup>528</sup> Krahl, et al 2010: 111, 234, 250-255

<sup>&</sup>lt;sup>529</sup> Ibid 43, 63-69, 250-251

<sup>&</sup>lt;sup>530</sup> Flecker 2002: 34-35, 106-117

<sup>&</sup>lt;sup>531</sup> Ibid 3, 30, 86, 88, 99-101, 118

<sup>&</sup>lt;sup>532</sup> Mathers and Flecker 77-90, 116,129-137, 149-153, 172-176

In addition to similar porcelain and stoneware ceramics and low-fired kendis and kundikas, an earthenware cooking pot, bottle and stove, iron cookware, a stone grindstone and roller, glass tumblers, flasks, and a gold foil sandwich-glass ointment bottle were recovered from the Pulau Buaya wreck.<sup>533</sup> A large number of lotus bowls with incised spotted deer and stag motifs on the interior were also excavated from the wreckage. 534 Identified as a kijang motif by Riddho and McKinnon, a deer native to Southeast Asia, the spotted-deer is looking over its shoulder from inside a Middle Eastern-style lozenge, surrounded by leaves and a repeated combed design. 535 The spotted-deer on the bowls bear a striking resemblance to spotted-deer that adorn an *albarello* pharmacy iar from early-fourteenth-century Ilkhanid Iran.<sup>536</sup> The jar is in the collection of the University of Michigan Museum of Art, and though it is shattered, its shards remain together, as one assemblage. This offers a unique opportunity to examine the exterior and interior of the piece in great detail. The albarello was likely produced in the Kashani kilns and is in the Sultanabad style.<sup>537</sup> It is made from light-tan paste with low relief designs and inscriptions across the body. An effaced Arabic inscription sits beneath the shoulder, and a prominent, fluted lotus motif encircles the base. The body of the jar is covered with glossy, crackled glaze and the painted design depicts spotted-deer and gazelle surrounded by a lush vegetal carpeting. The body of the jar is completely covered by high iridescent luster, a technique invented by the potters of Basra who double-fired ceramics with copper and silver pigments from glass production to

<sup>&</sup>lt;sup>533</sup> Riddho and McKinnon 1998:10-17,36-37, 42-47, 60-67, 70-75, 84-85, 88-89, 92-97

<sup>&</sup>lt;sup>534</sup> Ibid 8-9

<sup>&</sup>lt;sup>535</sup> Ibid

<sup>&</sup>lt;sup>536</sup> Albarello pharmacy jar, Iran. Accession number 1957/1.76. University of Michigan Museum of Art: <a href="https://exchange.umma.umich.edu/resources/11074/view">https://exchange.umma.umich.edu/resources/11074/view</a>; Object 1957/1.76 Accession file, University of Michigan Museum of Art

<sup>&</sup>lt;sup>537</sup> Ibid

recreate the dazzling,  $b\bar{u}$  qalam $\bar{u}n$  glint of metals and silk. The effect is dazzling and intensifies the impression of an exotic, enchanted natural environment created by the scene of spotted-deer and lush vegetation. A similar design can be seen on a twelfth-century, creamywhite Iranian *albarello* decorated in copper luster at the Metropolitan Museum of Art. <sup>539</sup> another Ilkhanid *albarello* shares a very similar base, 540 and a fifteenth-century Italian pharmacy jar mimics a similar scene of a deer in the midst of lush vegetation.<sup>541</sup> Gelfer-Jørgensen asserts that deer were the most commonly depicted creatures in Sasanian art, and describes continuity in this tradition with luster paintings of deer, gazelles, and stag created on imitation white wares fired in Baghdad in the ninth and tenth centuries.<sup>542</sup> She views these creatures as symbols of the sun or good fortune, and points towards their frequent depiction under the shelter of the Tree of Life, drinking from streams in lush vegetation.<sup>543</sup> In Chinese art, the deer is a representation of longevity and good-fortune, and the spotted-deer specifically regarded as a uniquely-talented creature at locating *lingzhī*, a traditional remedy and symbol of medicine and immortality.<sup>544</sup> *Lingzhī* represented the apex of good health made accessible through drugs, and the spotted-deer embodied its powers.

<sup>538</sup> Hallett in Krahl, et al 2010:78

<sup>&</sup>lt;sup>539</sup> Albarello Pharmacy Jar, Object 2013.255, Metropolitan Museum of Art: <a href="https://www.metmuseum.org/art/collection/search/458261?searchField=All&amp;sortBy=Relevance&amp;ft=iranian+jar&amp;offset=0&amp;rpp=80&amp;pos=16">https://www.metmuseum.org/art/collection/search/458261?searchField=All&amp;sortBy=Relevance&amp;ft=iranian+jar&amp;offset=0&amp;rpp=80&amp;pos=16</a>

<sup>&</sup>lt;sup>540</sup> Covered Jar (Albarello), Object 57.61.12a, b, Metropolitan Museum of Art: https://www.metmuseum.org/art/collection/search/451440

<sup>&</sup>lt;sup>541</sup> Pharmacy Jar, Object 46.85.10, Metropolitan Museum of Art: https://www.metmuseum.org/art/collection/search/468158

<sup>&</sup>lt;sup>542</sup> Mirjam Gelfer-Jørgensen. *Medieval Islamic Symbolism and the Paintings in the Cefalù Cathedral, Volume 1.* (Leiden: Brill, 1986), 124.

<sup>&</sup>lt;sup>543</sup> Ibid

<sup>&</sup>lt;sup>544</sup> Patricia Braaland Welch. Chinese Art: A Guide to Motifs and Visual Imagery. (Clarendon: Tuttle Publishing, 2013) 235.

Ilkhanid pharmacy shelves were uniquely positioned to display collections of medicines from across the expanse of Mongol empire, and Persian Gulf potters had centuries of experience fashioning hybrid forms inspired by their encounter with China by sea. Imported and innovated materials that reflected artistic and practical engagement between traditional and foreign technologies fashioned a place for exotic medicines in Persian society at the same time physicians like al-Kindi recorded uses of novel herbs in burgeoning pharmaceutical literature. Bookshelves and pharmacy shelves registered and grappled with new drugs, assigning them a place within the cosmology of medicine. The changes in ceramic technology in the Tang and Song periods paralleled the changes in pharmacological methods that necessitated new utensils and tools.

Understanding the inventories of premodern long-distance ships that popularized Chinese and Southeast Asian spices across the world is critical to understanding the economic and medical history of the spice routes. In Western maritime mythology, European navigators are credited with a near-genesis of the Southeast Asian spice trade, and the origins of their appetite for foreign spices is left in obscurity. There is a clear parallel between the spread and desire for Asian spices and ceramics in late medieval and Early Modern Europe, and the connection between these materials is not accidental. The acquisition of these objects became a driving force for European navigation, and the private and public collections that derived from this pursuit have been regarded as foundational to modern intellectual history. The inventories of shipwrecks from the premodern Maritime Silk Road establish that medical collecting has deep and substantive roots in the eastern Indian Ocean. Recontextualizing these materials within their original uses and meanings radically shifts the dismissal of these objects as mere "condiments" or décor. The aesthetics of the eastern ocean trade in medicines and ceramics has infused

globalized consumer culture for centuries, and if these materials are recontextualized in museums and historical scholarship, their influence of global intellectual history may be recognized as equally meaningful.

#### **CHAPTER V**

What Circulates: Knowledge and Blame in Fourteenth-Century China and Iran

#### Introduction

This is a story about disruption. In the first chapter of this dissertation I examined what happens to objects when their trajectories of circulation and use break and bend through violence and decontextualization. In this chapter, I trace one object's decontextualization in real time. To do that, I follow the threads of its production back to its original provenance in Iran and evaluate the circumstances that led to its creation, loss, and subsequent revival. The object in question is a manuscript about Chinese medicine created by a collaborative team of Persian and Chinese scholars in Tabriz in the early fourteenth century. Known as the *Tansūqnāma-i Ilkhān dar* funūn-i 'ulūm-i Khitāī (Treasure Book of the Ilkhan on the Sciences of China), it was created under the direction of Rashid al-Din Hamadani and found in 1938 in the library of the Aya Sofya in Istanbul. Scholars from the diverse disciplinary silos of Chinese history and medicine, the history of global science, literary criticism, and Islamic art have weighed in on its contents in the intervening decades since its rediscovery. Art historian, Persis Berlekamp, has addressed the methodological difficulties for researchers who engage with the text, each of whom is limited by the regional, linguistic, and analytical scopes of their disciplines, writing that "the only way to improve our understanding of the manuscript is for scholars working in different fields to engage with it from different angles."<sup>545</sup> This is certainly the case, but the evaluation of the manuscript for its aesthetics in recent scholarship has decontextualized the *Tansūqnāma* from its original purpose as a medical text, and warped its meaning for modern audiences. Accusations by modern scholars based on this analysis of the images that Rashīd al-Dīn mistranslated and misrepresented the Chinese sources of the manuscript for religious reasons fails to understand the nature of medical translation and commentary in the fourteenth-century Persianate world. Recontextualizing the *Tansūqnāma* within that world is the basis of this chapter.

Rashīd al-Dīn's circle in Tabriz included Chinese physicians and Persian students of medicine, including Ṣafī al-Dawla wa al-Dīn, a student of Chinese language and culture with whom he discussed language, book culture, and therapeutics in China. Ashīd al-Dīn was also a major investor in the long-distance merchant trade. Developments in China and Iran under Mongol rule provided him with access to a wealth of materials and travelers returning from China. The changes that enabled his high position as vizier and physician to the Ilkhans also exacerbated tensions on both sides of the trade routes that made the lives of medical middle men precarious in new ways. In the decades after the *Tansūqnāma* was completed, violence rooted in these tensions would claim the lives of not only Rashīd al-Dīn, but thousands of the Muslim merchants and cultural brokers from Iran that had settled on the Chinese coast.

The execution of Rashīd al-Dīn and fourteenth-century massacre of Muslims in China radically

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<sup>&</sup>lt;sup>545</sup> Persis Berlekamp, "The Limits of Artistic Exchange in Fourteenth-Century Tabriz: The Paradox of Rashid al-Din's Book on Chinese Medicine," in *Mugarnas* Vol. 27 (2010): 211.

<sup>&</sup>lt;sup>546</sup> Rashīd al-Dīn Hamadānī, *Tansūqnāma-i Ilkhān dar funūn-i 'ulūm-i Khitāī*, Süleymaniye Library Ms. 3596. (1313):24-25.

<sup>&</sup>lt;sup>547</sup> Anne Lambton, *Continuity and Change in Medieval Persia*. Albany: Bibliotheca Persica. (1988):335.

reshaped the exchange of medical goods and knowledge between China and Iran, and facilitated new configurations of global medicine in the early modern era. These events are largely forgotten to history because the reputation assassinations suffered by their victims, including Rashīd al-Dīn, set the stage for the erasure of their roles in the long history of medical globalization across the trade routes over the previous centuries.

The Mongol period for Iran and China is often represented by political and cultural historians as the genesis or high-water mark of Chinese-Persian contact, but I argue that the deep archaeological record of long-distance trade connections between the two cultural centers presented in this dissertation allows for a more complicated story. The *Tansūqnāma* is usually presented in Western scholarship as the *sui generis* only-child of Pax Mongolian medical exchange, or one of a single pair of twins if considered alongside the *Huihui Yàofáng (Muslim Book of Medical Formulas*, 回回藥方), which was produced in China. Distinct, idiosyncratic, and without obvious nearby examples in Persian and Arabic to compare it to, the manuscript is considered an ambitious experiment in cultural translation by its creators, but recently, has developed a reputation as a failure. It is seen as a failure, in part, because nothing identifiably like it came after. For Berlekamp, this is blamed on the images and translations used in the text, and ultimately, on Rashīd al-Dīn, himself. She writes:

"As a gloriously bold failure, the *Tansūqnāma* complicates the model of an open fourteenth-century Pax Mongolica, in which images across the Mongol Empire easily combined. On the one hand, there is no other context in which we can imagine this manuscript having been made in the first place. Any one of the images in this manuscript, unequivocally evoking Chinese visual traditions, rendered with a pen, and

paired with text in the Persian script, visually expresses with instant clarity exactly what was so remarkable about this period. But, on the other hand, the same images show just as clearly that the fact of encounter is not the same as exchange..."<sup>548</sup>

It failed, in this analysis, because of Rashīd al-Dīn's choices as a translator, which she and others root in his purported dishonesty in the face of feared Islamic repression. This chapter argues for a different interpretation that explains both the lack of subsequent like-manuscripts in Persian and the abrupt cessation of Persian medical trade from Quanzhou in the late-fourteenth century within the context of new power dynamics within the Mongol Empire. A reexamination of the *Tansūqnāma* and its creator within the context of the *longue durée* of Chinese-Persian medical exchange shines a new light on a manuscript that is typically characterized as a one-off oddity or failed, thwarted attempt at a new kind of cultural exchange. Rather than thinking of the *Tansūqnāma* as a failed beginning of a new era, I consider it here as the outgrowth of a very long process, as a form of exchange related to other medical interactions between China and Iran over multiple centuries. Furthermore, Rashīd al-Dīn was not only a protagonist of cultural exchange at the level of empire, but a victim of political changes in the Mongol period that made middle figures vulnerable to increased suspicion and violence. Within this context, the *Tansūqnāma* represents not a failed beginning, but a very violent end.

This chapter begins with a historical sketch of developments in southern China since the Muslim community reorganized in Quanzhou after the ninth-century Guangzhou massacre.

Developments in Song and Yuan dynasty book culture and printing produced the source material

<sup>&</sup>lt;sup>548</sup> Berlekamp 2010:230

for the *Tansūqnāma* and are discussed in relationship to textual production in Tabriz. These two sites, the Chinese coast and Rashīd al-Dīn's workshop in Iran, were arguably the most important poles of medical exchange between China and Iran in the fourteenth century. They were also both afflicted by violence that resulted from changing societal hierarchies under the Mongols that singled out middle figures like Rashīd al-Dīn and other cultural brokers for newfound privilege and newfound risk. By contextualizing Rashīd al-Dīn's position within the broader social context of the Mongol Empire in which he operated and the long history of robust medical contact between China and Iran, I argue that it was not the novelty of cultural contact under the Mongols that differentiated him and his project, but the outgrowth of radically altered social hierarchies for populations already in close contact. Reexamining the *Tansūqnāma* within this framework reveals it not as a failure, but as a tragic end. The chapter briefly examines the tenor of aesthetics-based approaches to the *Tansūqnāma* but leaves a detailed analysis of recent criticisms of Rashīd al-Dīn's translations and use of images to Appendix II. Finally, the Tansūqnāma is contextualized within the intellectual tradition of the Islamicate translation movement and the violent events that unfolded in Quanzhou during the Yuan-Ming transition.

#### Part I:

#### **Blood into Ink**

The spice-rich, southwestern territories of China were peripheral borderlands during the Northern Song Dynasty. Known as the Cinnamon Sea (*Guihai*), this mountainous region was thick with forests, waterways, and vegetation that provoked in the settler Chinese community a

fear of disease.<sup>549</sup> The area of *Guihai* known as Guangxi was a triple frontier, a place where long-standing Chinese colonial encroachments from the north, local and inland tribes, and brokers moving commodities on the Southern Ocean all met in a single region.

The Song port of Guangzhou, with its surviving foreign merchant community, sat facing the eastern boundary of *Guihai* as the westernmost major maritime gateway to China in a cluster of port cities dotting the coastline. Scholars disagree about whether or not the minaret of its Huaisheng Mosque, dated to 627 by a later Yuan stele onsite, <sup>550</sup> weathered the ninth-century massacre of the foreign merchant community in the city. If so, the tower witnessed the harvest and shipment of *Guihai* cinnamon and star anise from its shores against a backdrop of profound political discontent. The fate of coastal Muslim merchants was tied up with events unfolding across Eurasia in the late-thirteenth and fourteenth centuries, and their long-established role as medical middle men between China and the Middle East would shift dramatically as a result of Mongol rule.

China's centuries-long colonial project along the southern frontier had incited generations of local tensions and rebellions. During the Northern Song period violent uprisings in *Guihai* produced a grisly and enduring contribution to medical history that would find its way into the *Tansūqnāma* almost three centuries later. During the Qingli era (1041-1048), a captured rebel leader named Ōu Xīfàn was executed with his men in Guangxi under orders of the Imperial

<sup>&</sup>lt;sup>549</sup> See Fan Chengda, *Treatises of the Supervisor and Guardian of the Cinnamon Sea*, James M. Hargett, trans. Seattle: University of Washington Press, 2010 [1175]133-135; Stephen Boyanton, "The *Treatise on Cold Damage* and the Formation of Literati Medicine: Social, Epidemiological, and Medical Change in China, 1000-1400," Ph.D. Diss.(Columbia University, 2015):

<sup>&</sup>lt;sup>550</sup> See Nancy Shatzman Steinhardt, *China's Early Mosques*. Edinburgh: Edinburgh University Press, 2015:59.

Commissar, Du Qi. Õu Xīfàn and 55 of his men had their abdomens dissected by official command and their contents studied and sketched over the course of two gruesome days. 551 The images produced from these dissections appeared in Ōu Xīfân Wǔ Zàng Tú 歐希范五臟圖 (Chart of the Five Internal Organs of Ou Xifan) and were widely circulated. 552 Between 1102-1106, a group of thieves further up the coast were executed and doctors and artists were once again brought in to dissect them and record their observations. The physician Yang Jie, who had studied the Ōu Xīfān images and other tenth-century organ drawings created by the Daoist Yanluozi, "corrected" them, according to medical and visual historian Despeux, and included the new versions in his Cin Zhēn Tú 存真图 (Accurate Chart). 553 The organs of rebels, or their depictions, were added to the harvest of cinnamon and star anise as circulating medical goods from the south. According to medical historian Kuriyama, the images produced from the above executions "became the basis on which later physicians in China and Japan imagined the body's interior," with copies of the images appearing in medical texts far and wide. 554

Medical diagrams like those described above, called  $t\acute{u}$ , were carved into wooden blocks along with related explanatory text and recycled again and again into multiple books. These particular images of violent dissection have been found printed in texts outside of China dating

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<sup>&</sup>lt;sup>551</sup> See Wu Jian's and Li You's accounts in Ma Boying, *A History of Medicine in Chinese Culture*, Singapore: World Scientific, 2020: 498-499 and Catherine Despeux, "Picturing the Body in Chinese Medical and Daoist Texts from the Song to the Qing Period (10th to 19th Centuries)," in *Imagining Chinese Medicine*, Lo et al, eds. 2018:58.

 $<sup>^{552}</sup>$  Miyashita Saburo, "A Link in the Westward Transmission of Chinese Anatomy in the Later Middle Ages," in *Isis* Vol. 58. No. 4 (1967):486.; Despeux in Lo et al 2018:58.

<sup>&</sup>lt;sup>553</sup> Despeux in Lo et al 2018:58

<sup>&</sup>lt;sup>554</sup> Shigehisa Kuriyama, "Between Mind and Eye: Japanese Anatomy in the Eighteenth Century," in *Paths to Asian Medical Knowledge*, Leslie, Charles and Allan Young, eds. Berkeley: University of California Press, 1992: 24.

<sup>&</sup>lt;sup>555</sup> Berlekamp: (2010):214.

from the fourteenth century, but within China, prints only survive from the Ming period onward. Miyashita, a historian of medicine who researched the  $Tans\bar{u}qn\bar{a}ma$  in the nineteensixties, credits fellow scholar, Watanabe, with the identification of three examples of the reproduction of the Yang Jie dissection  $t\hat{u}$  in editions of other texts. Chinese medicine practitioner and historian Ma Boying asserts that these images also appeared in a work by Sun Yu in the Yuan period. See

In 1313 the dissection images described above found their way into the pages of a new translation project, this time not printed from wooden blocks, but drawn onto each page with ink, by hand, in a Persian manuscript [See Figures 11-12, Anatomical images from the *Tansūqnāma*]. Miyashita asserts that all of the images of dissection in the *Tansūqnāma* are derived from Yang Jie's *Accurate Chart*. In fact, seven of Yang Jie's ten anatomical drawings appear in the surviving pages of the manuscript. The original Persian manuscript consisted of four parts, plus a preface by Rashīd al-Dīn. Of these sections, only one copy of the preface and initial section are known to have survived, including two tables of contents that delineate the structure

 $<sup>^{556}</sup>$  See Miyashita 1967:487 for Japanese examples collected by the Buddhist physician-monk Kajiwara Shozen

<sup>&</sup>lt;sup>557</sup> "Nei Wai Erh Ching Tu by Chu Kung," (Composed 1118); The Hua Tuo Neizhao Tu was first published in the Song period, though attributed at the time to the Han. This was a common pattern of publication and attribution during the Song. Miyashita characterizes the above edition as Yuan, while Watanabe states that the earliest extant copy comes from the Ming period. Based on Miyashita's phrasing, it seems to be the case that he is asserting that the Ming edition is a reproduction of a Yuan edition (rather than Song), while Berlekamp asserts that Miyashita is mischaracterizing the extant edition as dating from the Yuan period. See Berlekamp 2010:215.; and "Kwang Wei Ta Fa" by Wang Hao Ku.

<sup>558</sup> Zhòng Kān Xuán Mén Mài Jué Nèi Zhào Tú 重刊玄门脉诀内照图 (Second Publication of Internal Pictures of Mysterious Gate and Pulse Verses) in Ma Boying, A History of Medicine in Chinese Culture.Singapore: World Scientific Publishing Company, 2020.:499.

<sup>&</sup>lt;sup>559</sup> Miyashita 1967:490

<sup>&</sup>lt;sup>560</sup> Ibid 490

of the missing sections of the text.<sup>561</sup>

In Tabriz, Chinese doctors, artists, and officials gathered together with scholars from across the Islamicate world at the Rab '-e Rashīdī of Rashīd al-Dīn to collaborate on the production of historical, theological, and medical texts, including the *Tansūqnāma*. The *Rab* '-e *Rashīdī* contained a manuscript workshop, hospital, medical school, khanaga, and shrine. The endowment deed of the educational complex described a sābāt, a "vaulted passage" or "arcade" that connected the hospital to the attached Sufi khanaga. <sup>562</sup> The khanaga was a charitable religious residence and gathering place for Sufi ritual. 563 The khanaqa housed a shaykh, eight Our'an reciters, five Sufi initiates, and a small number of guests and servants. <sup>564</sup> Sufi *khanagas* flanked the Indian Ocean littoral in the medieval period, facilitating the long-distance travel of merchants and religious scholars all the way from Iran to China. 565 The lodgings provided shelter, social structure, banking, and the promise of spiritual and physical safety for travellers. 566 The physical passageway between the Rab'e-Rashīdī's khanaga and the hospital connected medical students and teachers to the latest imports and knowledge from the entire geographic expanse of Islamic learning. Blair writes that the  $s\bar{a}b\bar{a}t$  connecting the khanaga to the hospital was also the lodging-place for the medical students, it had "at least nine cells, one each for two resident trainee physicians, a pharmacist, an optometrist, and

<sup>&</sup>lt;sup>561</sup> Hamadani 1313; Felix Klein-Franke, Zhu Ming, and Dai Qi, "The Passage of Chinese Medicine to the West," in *American Journal of Chinese Medicine*, Vol 29, Nos. 3-4 (2001):564.

<sup>&</sup>lt;sup>562</sup> Blair 1984:71,74,85

<sup>&</sup>lt;sup>563</sup> Blair 1984:71

<sup>&</sup>lt;sup>564</sup> Blair 1984:71

<sup>&</sup>lt;sup>565</sup> Kautz 2010:62,64

<sup>&</sup>lt;sup>566</sup> Kautz 2010:62,64

five...Qur'an reciters."<sup>567</sup> The space occupied by medical learning in Ilkhanid

Tabriz was neither here nor there, it was literally suspended between a network of long-distance travel and the site of clinical practice. Rashīd al-Dīn employed at the complex 50 international physician-teachers from China, India, Syria, and Egypt, all engaged in direct transmission of their knowledge to students in Tabriz. Rashīd al-Dīn's path to creating the *Rab'e-Rashīdī* started with a change of social order in Iran that began with the Mongol conquest. Despite his accomplishments, his biographical trajectory from his earliest life would color public perceptions of him on his dying day.

## The Life and Death of Rashīd al-Dīn

Rashīd al-Dīn was born into a family of Jewish physicians from Hamadān in 1247. Some of his earliest years were spent within an Ismaili stronghold near Alamut where his grandfather, Mūwaffaq al-Dawla 'Alī, and his father were resident when the Mongols captured it in 1256.<sup>569</sup> His grandfather entered the service of Hülegü Khan as a physician and his father became court apothecary. Rashīd al-Dīn recounts in his world history, the *Jāmi*' *al-Tawārīkh*, that a group of Hamadānī Jewish physicians were received by Hülegü from the fortress at Alamut and treated well after the siege. In the *Bayān al-Haqā 'iq* and *Kitāb al-Tawdīḥāt* he recalls his childhood days in the Mongol court, spent in the company of the Mongol royals, Buddhist, Christian, and Muslim attendants, and his own family. Rashīd al-Dīn was eleven years old in 1258 when the Ilkhanate was officially established. He was a close companion of Hülegü's family and descendants, and as an adult was present in the royal encampment when the future Ilkhan Öljeitü

<sup>&</sup>lt;sup>567</sup> Blair 1984:71

<sup>&</sup>lt;sup>568</sup> Brown 1969[1920]:86

<sup>&</sup>lt;sup>569</sup> See Farhad Daftary, *The Ismailis: Their History and Doctrines*. Cambridge: Cambridge University Press (2007): 306; George Lane, *Genghis Khan and Mongol Rule*. Indianapolis: Hackett Publishing (2009):121.

was born. Rashīd al-Dīn served as the representative of Öljeitü's bride at their wedding and raised their daughter in his own household.<sup>570</sup>

In 1260 Hülegü's brother, Kublai, began his reign as Khagan of the Mongol Empire. Within his administration in China he continued the traditional Chinggisid practice of rewarding early loyalty through the granting of privileges and position. One application of this principle was the designation of loyal, conquered people who had rendered service to Chinggis Khan, and their descendents, as *ötegü boghol* (old slaves). For example, Rashīd al-Dīn writes in the *Jāmi' al-Tawārīkh* that various ranks and privileges, including the extension of kinship through marriage, were given to different loyal branches of the Tartars: "to them the custom of *ötegü boghol* was applied."

Atwood makes a compelling argument that the principle of hereditary loyalty and rights which granted status based on "connection to the founding of Chinggis Khan," found new expressions in Yuan China that resonated with previous Chinese imperial practices.<sup>573</sup> He writes that the "Mongol imperial viewpoint" was that "all social status was legitimated by tracing the holder's line back to his ancestor's position won in the founding era under Chinggis Khan."<sup>574</sup> In

<sup>&</sup>lt;sup>570</sup> Birgitt Hoffmann, "Speaking about Oneself: Autobiographical Statements in the Works of Rashīd al-Dīn," in *Rashīd al-Dīn: Agent and Mediator of Cultural Exchanges in Ilkhanid Iran,* Anna Akasoy, Charles Burnett, and Ronit Yoeli-Tlalim, eds. London: The Warburg Institute, (2013):4, 8-11; see also Dorothea Krawulsky, *The Mongol Ilkhans and their Vizier Rashid al-Din,* Frankfurt: Peter Lang, (2011); and Rashid al-Din, *Bayan al-Haqa'iq*, trans. Birgitt Hoffmann, pg 82, from Hoffman 2013:8.

<sup>&</sup>lt;sup>571</sup> See Christopher P. Atwood, "Mongols, Arabs, Kurds, and Franks: Rashīd al-Dīn's Comparative Ethnography of Tribal Society," in *Rashīd al-Dīn: Agent and Mediator of Cultural Exchanges in Ilkhanid Iran,* Anna Akasoy, Charles Burnett, and Ronit Yoeli-Tlalim, eds. London: The Warburg Institute, (2013): 225. According to Atwood, this phrase is often read as *unaghan boghol*, hereditary slave.

<sup>572</sup> Rashid al-Din in Atwood 2013:246

<sup>&</sup>lt;sup>573</sup> Atwood 2013:247

<sup>574</sup> lbid

imperial China, *gōngchén* (功臣), or "meritorious servants" who were "early helpers of the dynastic founder … were generally given an important institutional role" and Atwood argues that in the Yuan dynasty the Mongols "gave an unusually prominent role to the descendants of such 'meritorious servants." This pattern seems to have also been the case within the Ilkhanate, including for Rashīd al-Dīn and his own family line.

Atwood attributes the linkage between loyalty, heredity, and status as a major motivation for Rashīd al-Dīn's authorship of history and tribal biographies.<sup>576</sup> He writes that "lineage knowledge, like any other 'custom,' is not a thing handed off from person to person like a football, but a complex social practice that had to be continually nurtured - in large part by writing history."<sup>577</sup> Rashīd al-Dīn was a primary broker of this knowledge and performed the continuing legacy of his own lineage of loyalty to Hulegu's family in his writings and throughout his career, with increasing intensity towards the end of his life.

What can we make of the Mongol practice of hereditary loyalty in relation to Rashīd al-Dīn's own place in the Ilkhanid court? Perceptions of Rashīd al-Dīn's hereditary loyalty to the Chinggisids and status as a middle man who mediated between the Mongol elite and Persian society rendered him uniquely powerful and extremely vulnerable during his lifetime. Hülegü Khan, who first received him into the Mongol inner circle, died in 1265. Rashīd al-Dīn served as a physician for Hülegü's son, Abāqā, and then as physician and vizier to the Ilkhans Ghāzān, Öljeitü, and Abū Sa'īd. But the first known role he was given in the Mongol court perhaps

<sup>&</sup>lt;sup>575</sup> Ibid 238-239

<sup>&</sup>lt;sup>576</sup> Ibid 237, 244

<sup>&</sup>lt;sup>577</sup> Ibid 245

demonstrates the intimacy and trust he enjoyed better than any other: Rashīd al-Dīn began as a ba'urchi, a member of the imperial guard entrusted with the safety and provision of the Ilkhan's food and drink.<sup>578</sup>

Three years after the *Tansūgnāma* was completed, in 1316, Öljeitü died. His son, Abū Sa'īd, succeeded him. In a turn of events that forever changed how Rashīd al-Dīn's loyalty was inscribed into history, he was held responsible for Öljeitü's death and was executed in 1318. Under the Timurids, his body was exhumed from his Islamic shrine and reburied in a Jewish cemetery. Rashīd al-Dīn's life and memory were upended on accusations of prescribing the wrong medicine to Öljeitü, a colossal failure of either knowledge or trust.<sup>579</sup> Scholars continue to dig up his bones and assign him a place as an outsider, often examining his motives for hidden meanings. Even seven hundred years after his death, the most mundane of his choices are reexamined for a hidden agenda in the pages of the *Tansūqnāma*. The second-guessing of Rashīd al-Dīn's motives in relationship to Islam perpetually repositions him as a crypto-Jew, and the suspicion with which his choices as a translator are evaluated participates in a discursive trajectory that reviled him. Although it is clear that his family heritage was Jewish, it is not clear when his line converted. Most authors safely assert that he had become a Muslim by the age of thirty, but others have claimed that his father converted and raised him as a Muslim from birth.<sup>580</sup>

<sup>&</sup>lt;sup>578</sup> Thomas T. Allsen, *Culture and Conquest in Mongol Eurasia*. Cambridge: Cambridge University Press. (2001) 2001:127-128.  $^{579}$  See Abbas al-Azzawi's account in Krawulsky 2011:133 and Brown 1969[1920]:51-52

<sup>580</sup> Hoffman 4

The accounts of Rashīd al-Dīn that survive describing his role as a *ba'urchi* in his early career are rhetorical, contrasting the trust of feeding the ilkhans with the act of poisoning. These accounts are caricatures of disloyalty and deceit. Mamluk sources emphasize the trust placed in him early on, describing him as the "advisor, friend, table companion, comrade and cook" of Ghāzān, who "would not eat except from his hand and the hands of his son. They would cook for him in silver vessels and ladle it out on gold trays and cups, and carry it out to him themselves. Khwajah Rashid would cut it up for him and serve him with his hand" His fall from grace was both moral and epistemological, the betrayal of the hereditary loyalty placed in him by Hülegü's family undermined by suspicion of deceit and the roots of his heredity line.

Rashīd al-Dīn's fall was a part of a wave of antisemitism that swept through the Ilkhanate.<sup>582</sup>
But it was also connected to sentiments that were growing among populations under Mongol occupation across the empire. The social structure Mongol rule imposed on both Iran and China led to fissures between occupied subjects and those cast into the role of middlemen between the Chinggisids and locals. Loyalty had its limits, and that boundary would tie up the fates of Rashīd al-Dīn and the community of sea merchants that had long been a part of life in China's coastal cities.

#### The Semuren

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<sup>&</sup>lt;sup>581</sup> Amitai, "New Material from Mamluk Sources," 25; Allsen 2001:127

<sup>&</sup>lt;sup>582</sup> Brown 1969[1920]:34 Brown, E.G.

<sup>1969 [1920]</sup> Literary History of Persia: 1265-1502. Cambridge: Cambridge University Press.

In China, the Mongol principle of hereditary loyalty was extended not just to individuals and to families, but to groups and conquered peoples. Groups that were subjugated early in Chinggis Khan's sweep through Eurasia were used to subjugate the groups that followed. The Song retreated from northern China in 1127 and the Jurchen Jin Dynasty held the north. In 1210 Chinggis Khan conquered the Western Xia and the next year invaded the Jin. By 1215 he had taken the Jin capital, in what is now known as Beijing. While continuing the conquest of China, the Mongols also declared war on Khwarazm in 1219. The Mongol victory in Transoxania would come to shape the structure of the new social order in Yuan China through the application of a new four-tiered caste hierarchy. Subjects of the growing Mongol empire in China were categorized by their regional and ethnic status, based on how early their group submitted to Mongol rule. At the top of the hierarchy were the Mongols, followed by a category called semuren, then the northern Chinese, followed, last, by the inhabitants of southern China. The semuren (色目人), or "people of various categories," included conquered Muslims from Central Asia- Khwarazm, Transoxania, Uighurs, and other Westerners. 583 Although the semuren held high political and social status in Yuan China, and were used by the Mongols as officers, colonizers, advisors, and administrators, they were also conquered people. Many semu originally entered Mongol service through forced migration from Central Asia. For the conquered Chinese, however, *semu* were often the local face of Mongol power and visibly enjoyed unique privileges.

The *semuren* were middlemen in Mongol China. Brose writes that, "the Mongols wished to segment their administrative apparatus among different ethnic groups," while "separating

<sup>&</sup>lt;sup>583</sup> See Michael C. Brose, "Central Asians in Mongol China: Experiencing the 'Other' From Two Perspectives," in *The Medieval History Journal*, Vol. 5, No. 2 (2002): 272-273.

themselves from their subjects."<sup>584</sup> The advice of newly-conquered Muslims was utilized to administer China. Allsen writes that "as a decided minority in their own state, the Mongols made extensive use of foreigners, without local political ties, to help them rule their vast domains." And Rossabi has asserted that one of many advantages of this practice for the Mongols was that it allowed them to use "the Muslims as scapegoats," and their long-term success in China in "trade and finance" as merchants made them identifiable targets. Middle men "provoked the wrath of the conquerors and the conquered."<sup>587</sup>

The position of Muslim and other *semu* middlemen in China echoes the role played by Rashīd al-Dīn in the Ilkhanid court. Rossabi describes the scapegoating of *semu* Muslims related to banking and finance as parallel with dynamics of antisemitism, and the *semuren* in China included Jews along with other Western groups. A faultline of cultural and religious prejudice against Jews ran through Persian society, and Jews (or people perceived as Jews) who rose to positions of political and financial power through loyalty and association with the Mongol rulers suffered violence, with their wealth and properties stolen. Rashīd al-Dīn wrote in the *Jāmi* al-Tawārīkh that soldiers pillaged the estates of a Jewish former vizier, ransacking his homes and property, "carrying away everything they found and leaving the people enmeshed in turmoil and strife." When the vizier in question was executed, Brown writes that "in Baghdad alone more than a hundred of their chief men were killed," and "the collapse of the Jewish ascendancy" at

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<sup>&</sup>lt;sup>584</sup> Brose 2002:275-276

<sup>&</sup>lt;sup>585</sup> See Allsen 2001:5-7.

<sup>586</sup> lbid

<sup>&</sup>lt;sup>587</sup> Rossabi 258-259

<sup>&</sup>lt;sup>588</sup> Atwood 250

Thackston[Fazlullah] 1999:575).Rashiduddin Fazlullah 1999 [14th cent] WM Thackston, trans. Jami'u't-Tawarikh Compendium of Chronicles: A History of the Mongols, Volumes 1-3. Cambridge: Harvard University Department of Near Eastern Languages

the Ilkhanid court was celebrated from the local pulpit.<sup>590</sup> Resentment towards Mongol rule was mediated through resentment towards Jewish power. For a conquered Muslim population, resentments grew highest when those formerly-assigned lower status within local social hierarchies of power were granted superior positions at court. This dynamic would ultimately prove equally lethal in China.

## The Beginning of the End in Quanzhou

In 1263, the Office of Western Medicines (*xiyu yiyao si*) was established to provide medical treatments from the Islamicate world to the emperor, his guard, and the poor in the Mongol capital of China. In 1270 this institution was refashioned as the Office of Broad Grace (廣惠 *Guanghui Si*) and by 1292 there were offices of Islamic medicine in both Yuan capitals. By 1322 each office was overseen by the overarching *Guanghui Si*. A Chinese translation and compilation of Islamic medical texts, the *Huihui Yaofang* (回回藥方), a partial copy of which survives from the Ming period, is believed to have been associated with these institutions. S93

In the same year the Mongol Administration formed the Office of Western Medicine, the Song emperor on the southern coast granted permission to the governor of Quanzhou to use the "registered wealth of the foreign merchants to renovate the city wall." The Southern Song had

<sup>&</sup>lt;sup>590</sup> Brown 1969[1920]:34

<sup>&</sup>lt;sup>591</sup> See Shinno 28, 138; Carla Nappi, "Bolatu's Pharmacy Theriac in Early Modern China," in *Early Science and Medicine*, Vol. 14. No. 6 (2009):744; Paul D. Buell, "How did Persian and Other Western Medical Knowledge Move East, and Chinese West? A Look at the Role of Rashid al-Din and Others," in *Asian Medicine* Vol. 3 (2007)279-295.

<sup>&</sup>lt;sup>592</sup> Shinno 28, 138

<sup>&</sup>lt;sup>593</sup> Shinno 139; Buell 2007

<sup>&</sup>lt;sup>594</sup> "Towns" in "Gui Zhi Zhi, part 1" in Annals of Quanzhou Fu Vol 4 (1612) from Chen 1984: xv, xx.

been localized on the coast for over 130 years, and though the Mongols posed a signifiant threat from the north that grew with every passing day, the long standing Muslim merchant community of the southern port cities flourished in Quanzhou with the Song elite nearby. Like many merchant families, the Pu family had relocated from Guangzhou after having lived there "for several generations." By the later days of the Southern Song, Pu Shougeng had held his position overseeing the Foreign Trade Office of Quanzhou for over thirty years. 596

Archaeological evidence and written sources record between six to ten active mosques in Quanzhou during this period. 597

An inscription inside Quanzhou's Aṣḥāb Mosque<sup>598</sup> records the period of its original construction as falling between 1009-1010 CE, during the Northern Song, a moment that fell between the wrecked voyages of the Intan and the Java Sea Wreck vessels described elsewhere in this dissertation. The mosque now holds the broken remains of other mosques within its walls, and shattered tombstones that have been recovered around Quanzhou over the last century. The most prominent of these salvaged artifacts is a stele commemorating the 1131 construction of the *Qingjing* Mosque by Najib Muzhir al-Dīn, a merchant from Siraf.<sup>599</sup> That mosque is now destroyed and the Ashab grounds are filled with desecrated tombstones, as is the Quanzhou Maritime Museum and its back lot. These broken stones are all over the city. Recovered from farm land, floor tiling, buried under bodies of water, and used in the city wall they helped to pay

<sup>&</sup>lt;sup>595</sup> Chen xv

<sup>&</sup>lt;sup>596</sup> Quan-zhi in Vol 152 of Min Shu, Ying-Guo-Gong-Ji in Vol 47 of Song History from Chen xv-xxi

<sup>ິ່</sup>ງ Chen xv

<sup>&</sup>lt;sup>598</sup> The Ashab Mosque, which still stands, is often mistakenly called the Qingjing Mosque because it houses materials from the old Qingjing Mosque.

<sup>&</sup>lt;sup>599</sup> Chen 14, stele from Qingjing mosque housed in Ashab mosque

for, the memories of these individuals whose names are commemorated in stone were violently purged from Quanzhou's soil for a period of years around the Yuan-Ming transition.

Hauntingly, a stone carving recovered from a mosque destroyed in this wave of violence and now on display at the Ashāb mosque reads, "Enter therein in peace, secure."

In 1273 an epidemic swept through the remnant of Song dynasty China. 601 A sunken ship in the Quanzhou harbor seems to have been abandoned with its hull full of medicines and spices soon after. 602 In 1276 the Song Grand Dowager Empress Xie declared defeat and capitulated to the Mongols, but a band of loyalists fled the capital by sea with two young princes. Now rebels themselves, the band sailed south down the coast from Lin'an, alighted in Dinghai, then Wenzhou, and stopped at Fuzhou to the north of Quanzhou's port. 603 In Fuzhou the eldest prince was crowned Emperor Duanzong of Song, but the band of loyalists continued to be pursued by the Mongols. 604 In 1277 the remainder of the Song court fled south to Quanzhou, where they fatefully encountered the official, Pu Shougeng, the long-standing Song harbormaster. A prominent Muslim, Pu conrolled enormous wealth and possessed relationships throughout and beyond the region as a result of his family's trade connections that the Song fragment hoped to make use of. In a turn of events that would impact Quanzhou for generations, Pu denied them aid and turned his allegiance to the Mongols. 605 His defection was a body blow to the remaining

<sup>&</sup>lt;sup>600</sup> Qur'an 72:18; Chen 1984:28

<sup>601</sup> Hymes 293

<sup>&</sup>lt;sup>602</sup> See Chapter 4 for further discussion of the cargo of the Quanzhou ship. According to Jun Kimura, the latest dated coin recovered from the keel of the boat is dated from 1274. See Kimura 2016: 80, 101, 264. <sup>603</sup> See Shinno 49; Lo Jung-Pang Sea Power xxxiii, Adam Kessler, "The Last Days of the Song Dynasty: Evidence of the Flight of Song Officials to Southeast Asia before the Mongol Invasions." *Journal of the* 

Royal Asiatic Society Vol. 28 No.2(2018): 317

<sup>&</sup>lt;sup>604</sup> Kessler 317.

<sup>605</sup> Lo Jung-Pang xxxv

Song loyalists and he was appointed the head of the new Mongol Maritime Trade Office in Quanzhou. 606 When Pu surrendered, he executed supporters of the Song, helped amass a navy for the Mongols, and influenced other coastal commanders to peacefully submit. In 1278 he was appointed the deputy governor of Fujian.<sup>607</sup> He would become a symbol of betrayal to the Chinese in rhetoric that would frame the experiences of Muslims in Quanzhou for centuries.

The remainder of the renegade Song court did not last long after Pu's defection, taking refuge at sea. The former rulers of the remote southwestern frontier now attempted to take refuge there en route to Annam, but a typhoon destroyed a segment of their ships, and the increasingly beleaguered troops suffered from escalating illness. 608 In 1278 the young Emperor Duanzong sickened after falling into the sea, and died. 609 His brother, the surviving Song prince, was crowned and the loyalists faced off against the Mongols repeatedly off the coast of Guangdong. 610 After enduring increasing sickness, some of the loyalists escaped by sea, abandoning the Song cause, while others fought until they were overcome. 611 In 1279 the surviving members of the Song remnant jumped into the sea and drowned.<sup>612</sup>

The turn of the thirteenth to fourteenth centuries witnessed a radical reconfiguration of society in coastal China. Guihai and the southern frontier had, a century before, been a tropical hinterland

<sup>&</sup>lt;sup>606</sup> Chaffee in Schottenhammer The East Asian Mediterranean 117

<sup>&</sup>lt;sup>607</sup> Lo Jung-Pang 2012:xxxvii; John W. Chafee. *The Muslim Merchants of Premodern China: The History* of a Maritime Asian Trade Diaspora, 750-1400. (Cambridge: Cambridge University Press:2018):146 <sup>608</sup> Kessler 317; Kessler 318

<sup>609</sup> Kessler 318, 320; Lo xxxviii

<sup>&</sup>lt;sup>610</sup> Lo Jung-Pang 2012: xxxviii

<sup>611</sup> Lo Jung-Pang 2012 xli-xlvii

<sup>612</sup> Lo Jung-Pang 2012 xli- xlvii

dominated by Song imperialism where officials had the power to pluck the organs of rebels and immortalize their dissections in books printed with the pulp and ashes of local trees. In the late thirteenth century the coast had become the last stand of a collapsed regime, and the south ultimately bent to new power. Muslim *semuren* who had submitted to Mongol rule or were forced to capitulate during the conquest of Khwarazm and Central Asia were brought into the southwest frontier and coast to establish Mongol sovereignty. Sayyid Ājall Shams al-Dīn Omar from Bukhara was appointed governor of Yunnan and his descendents rose to positions of power throughout the south. Pu Shougeng's sons were granted high imperial positions and an influx of Muslim *semu* soldiers were stationed in Quanzhou. The social hierarchy of the south had inverted completely based on a timeline of loyalty to the new rulers, the Mongols categorized the fallen Song and other Chinese residents of the south as the lowest strata of society, below northerners and below the *semuren*. The former Song occupiers of the south became the lowest strata of the occupied.

For a period of almost a hundred years, the Muslim community of southern China would continue to enjoy the stability they had regained after the tumultuous events of the late Tang dynasty, but with newly connected political power. Rashīd al-Dīn's merchants and informants would have encountered a deeply rooted Persian community in China at the beginning of the fourteenth century that was forging new connections with an influx of Muslim immigrants from other regions. The background of this context can help us better situate the *Tansūqnāma*'s creation and its disappearance after the death of Rashīd al-Dīn. The *Tansūqnāma* was an

<sup>613</sup> Chafee 2018:149; Pearson, Li, and Li 2002:28

outgrowth of the centuries of medical exchange that had occurred between China and Iran and the textual culture of translation animating Islamicate medicine since the eighth century. The shifts under and after Mongol rule were seismic and rocked populations in both China and Iran. Changes in power and social structure altered relationships in ways that produced both cultural achievements and social fissures that would result in the upending of centuries old patterns of shared space and relationship. The achievements of that time have been largely buried under water and dirt like shattered tombstones and sunken ships, or, in the case of the *Tansūqnāma*, lost on a library shelf, waiting to be found. The way scholarship now takes the *Tansūqnāma* up and frames its reception for posterity will not only determine what we are able to understand about its scope and depth, but what we understand about the interconnected world that created it. By returning the *Tansūqnāma* and its creator to their original intellectual contexts analytically, we have the opportunity to lay Rashīd al-Dīn's bones to rest.

#### Part II:

#### The Role of Texts and Circulation

An apocryphal story from Nizāmī-i Arūzī's twelfth-century *Chahār Maqāla* about the life of the Persian physician al-Rāzī illustrates the dynamism and mobility of medical texts in the medieval Islamicate world. According to the story, a Samanid ruler suffered from an illness which no local physician could cure. From Bukhara, he sent for al-Rāzī but the physician refused to board the boat to cross the Oxus river, saying, "I will not embark on the boat; God Most High saith, *Do not cast yourselves into peril with your own hands*; and, again, it is surely a thing remote from

<sup>614</sup> See Nizāmī 'Arūzī, *The Chahár Maqála ("Four Discourses") of Nidhámí-i-'Arúdí-i-Samarqandi*, Edward G. Browne, trans. 1899, Pp. 115-118.

wisdom voluntarily to place one's self in so hazardous a position."<sup>615</sup> Al-Rāzī encamped at the shore and wrote a medical treatise in honour of the afflicted ruler, *al-Kitāb al-Manṣūrī fī al-ṭibb*, while a messenger rode to Bukhura to seek instructions.<sup>616</sup> When the messenger returned, al-Rāzī presented his text, saying, "I am this book, and by this book thou canst attain thine object, so there is no need of me."<sup>617</sup> According to the story, after unsuccessful attempts to persuade him with wealth, the messengers kidnapped al-Rāzī and ferried him across the river. The remainder of the episode involves al-Rāzī curing the Samanid ruler and escaping through a feat of cleverness.

The characterization in the story of al-Rāzī's book as a proxy for himself can be read on multiple levels. Al-Rāzī was the first physician in the Islamicate medical tradition known to have written a medical book for those who had no access to a doctor. He wrote *For One Without a Doctor (Man La Yaḥḍuruhu al-Ṭabīb)* for travelers, the poor, or those in remote areas who could not travel to or receive the care of a physician. The symbolism of his book as a proxy for his being also poetically illustrates a historical truth about the traditional process of medical training. The migration of scholars played a very important role in medieval Islamic education. With the emergence of the madrasa system of learning in Iran, the study of jurisprudence, Arabic, philology, and the Qur'an gradually settled into sedentary schools across the country. The study of medicine, however, remained outside the reach of madrasa education and continued to

<sup>&</sup>lt;sup>613</sup> Ibid 115.

<sup>&</sup>lt;sup>616</sup> The book is dedicated to Abu Saleh Mansur ibn Ishaq.

<sup>617</sup> Ibid

<sup>&</sup>lt;sup>618</sup> See Sina Zarrintan, Annis Shahnaee, and Saeid Aslanabadi "Rhazes (ad 865-925) and His Early Contributions to the Field of Pediatrics," in *Child's Nervous System* Vol. 34 (2018):1436.

<sup>&</sup>lt;sup>619</sup> Christopher Melchart, "Education iv.The Medieval Madrassa." *Encyclopedia Iranica* Vol. 8, Fasc. 2, 1997

utilize a much older model of migratory knowledge acquisition rooted in travel to a respected teacher's home. Would-be medical scholar-practitioners sought out the expertise of learned men, often at great distances, in an epistemological pilgrimage that would grant them knowledge and authority. Before the institutionalization of sedentary madrasas, would-be medics and would-be religious scholars often found themselves in close proximity as travellers, staying in homes and mosques and merchant's quarters designated for itinerant learners and traders. The *khanaqa* lodgings attached to Rashīd al-Dīn's medical school evoke this tradition.

The book and the river-crossing in the al-Rāzī story also point to the then-recent history of paper in al-Rāzī's world. The borderlands he attempts to cross by book is the geographic region from which Chinese paper-making technology entered the Islamic world two centuries earlier. Transoxania had become the unparalleled center of Islamic paper production, enabling a new, more accessible portability of texts that had never been possible before. Texts and people circulated, crossing borders in person or in proxy in increasingly intensified ways.

In the same way a healing amulet could be written in ink, a book could do the same by calling down the presence of another source of knowledge and healing. A Chinese scholar visited al-Rāzī in the tenth century and together they created a proxy of Galen for the scholar to carry back home to China. Al-Rāzī describes their process of transcription, he and a group of students read the texts aloud to the visitor over the course of a month, checking his work for accuracy. The traveler transcribed the material rapidly in a cursive shorthand and ostensibly carried it with him

<sup>620</sup> Roy Mottehedeh The Mantle of the Prophet. 1985:82

In the introduction of his medical poem,  $Urj\bar{u}za$ , Ibn Sina also characterizes his intentions to provide a proxy of himself, not in the form of a book, but in the form of a poem. The  $Urj\bar{u}za$  is a proxy of his book, al- $Q\bar{a}n\bar{u}n$ , in rhymed, memorizable form, that is, in turn, a proxy of his person. Meant to reach remote practitioners that lacked access to proper medical education or were mobile, themselves, while on the road, medical poetry provided even more portability than paper for doctors and pedagogically cemented metrics and methods of treatment into their functional memory. Ibn Sīnā's  $Q\bar{a}n\bar{u}n$  contains a substantive section on pulse diagnosis. It is significant that the  $Tans\bar{u}qn\bar{a}ma$  contains a translation and transliteration of the Chinese  $Mai\ Jue$ ,  $Pulse\ Poem$ , into Persian. In each of these cases, textual and pedagogical practices were specialized for the use of travelers and medical students who would need access to specialized knowledge on the road.

The *Mai Jue* is often attributed to Wang Shuhe, but was actually authored by Gao Yangsheng. 622 Multiple *Mai Jue* texts were authored in the Yuan period. 623 The text found in the *Tansūqnāma* has been identified by Klein-Franke and Zhu as a commentary on Gao Yangsheng's *Mai Jue* that "preserves almost the whole text of [the] Mai Jue," a fact which they found "very helpful... to identify the Arabic "pinyin" transcription of the Chinese poetical

<sup>&</sup>lt;sup>621</sup> From the Fihrist of Ibn al-Nadim, in Felix Klein-Franke and Zhu Ming, "How Galen's "Sixteen Books" Came to China in the Tenth Century AD," in *The American Journal of Chinese Medicine*, Vol. 33, No. 2:339-340.

<sup>622</sup> Unschuld and Zheng 2012:129,1264

<sup>623</sup> Buck 2014:245; Zheng 2002:82; Unschuld and Zheng 2012:1264

portions."<sup>624</sup> This commentary, the *Mai Jue Kan Wu* by Dai Qizong, was "compiled almost at the same time" as the *Tansūqnāma* and circulated widely.<sup>625</sup>

According to Chinese medical historian Charlotte Furth, medical authority in China was constructed around a model of lineage and the charisma of great teachers before the Song period. Yuan medical historian Reiko Shinno argues that with the development and expanse of printing technology in the Song and Mongol periods, the source of authority shifted in medical education. I argue that texts stood in as icons of medical lineages in this period and as portable proxies of travel. Medical books became standardized under the Song and the official medical curriculum was standardized under the Yuan to include a specific series of texts. Allsen asserts that Rashīd al-Dīn's selection of material for the *Tansūqnāma* reflected newly codified texts that had been mandated as official curriculum in China under Mongol rule. He writes that this selection of material, "was hardly a matter of chance or mere availability; rather, Mongolian priorities of long standing, first established by the eastern court, were transmitted to the Il-khans, who willingly followed the Yuan precedent."

Fujian emerged as a center of book publishing in the Song and Yuan periods.<sup>629</sup> Bamboo, pear, catalpa, and pine trees were abundant and harvested for the production of paper and ink. The waterways connecting the coast to inland centers enabled the development of the book trade and

<sup>624</sup> Klein-Franke and Zhu 1998:429

<sup>&</sup>lt;sup>625</sup> Ibid

<sup>&</sup>lt;sup>626</sup> Shinno 139

<sup>&</sup>lt;sup>627</sup> Shinno 69

<sup>&</sup>lt;sup>628</sup> Allsen 2001:146

<sup>629</sup> Lucille Chia, "The Development of the Jiangyang Book Trade, Song-Yuan," in *Late Imperial China* Vol. 17, No.1,15.

the flourishing of intellectual culture. Multiple editions of collections of medical prescriptions and materia medica were printed in Fujian at this time. Intensified Song medical printing was partially motivated by epidemics that repeatedly hit the southern frontier.<sup>630</sup>

Under the Yuan, medical schools were reestablished and expanded outside the capitals, and central for our analysis, began admitting the children of drug merchants as students.<sup>631</sup> This change suggests a very likely link between Rashīd al-Dīn's informants, the text and image selections in the *Tansūqnāma*, and the Persian merchant community in Quanzhou and the rest of Fujian who had both dominated the drug trade for generations and intermarried with Chinese families.

Opening the *Tansūqnāma* manuscript, the indexicality of the rebel Ōu Xīfàn's body and Yang Jie's brush flood to the surface of the page and the edges of memory. Archaeologist and museum curator Justin Jennings has applied geographer David Harvey's analysis of the technological changes that accompany globalization to the dynamics of intensified long-distance trade in the premodern world. He identifies time-space compression as a hallmark of heightened connectivities that made the world feel smaller. Advances in the technology of shipbuilding have been put forward as an example of changing technologies that collapsed distances across the trade routes, but changes in book production did the same. As an object, the *Tansūqnāma* embodied the connections made possible over the *longue durée* of trade and collapsed the

 $<sup>^{630}</sup>$  Shinno 33

<sup>&</sup>lt;sup>631</sup> Shinno 39

<sup>&</sup>lt;sup>632</sup> Justin Jennings, Globalizations and the Ancient World. Cambridge: Cambridge University Press (2010):123

<sup>633</sup> Niziolek and Respess 2017:794

distance between medical education in Yuan China and Tabriz.

Like the wave of ink in countless other Song Dynasty publications that anchored themselves backwards in time to the masters of the past to establish contemporary legitimacy, the reprinted images of bodies within the pages of ever-more-widely circulating medical texts were pregnant with the past but labouring in new contexts. The dissection  $t\acute{u}$  represented not only what was originally seen inside rebel bodies, but also who did the seeing. These  $t\hat{u}$  are icons of the lineage of observers who beheld the inside of the human body in *Guihai* and on the Chinese coast. For the creators of the *Tansūqnāma*, the powers of observation evoked by the images were of particular significance. The specific texts and images selected for inclusion and the symbolic meaning attached to the origin of the source material in China made the *Tansūqnāma* an important artifact of Persian epistemology in the fourteenth century. It was not a barren, one-off work of visual exotica, but a generative participant in two lineages of medical training, Chinese and Persian.

What happens when we analyze a text as a thing? Not as a transmission of lexical and conceptual meaning in a vacuum, or even as a work of art, but as a material thing that interacts with the bodies and minds of its stakeholders in time and space? An object-centered perspective illuminates our understandings of the *functions* of the *Tansūqnāma* as a book, which has otherwise been criticized as a failure or a fraud by scholars who claim that its language and images were not accessible enough to effectively translate the complexity of Chinese medicine. 634 Berlekamp, along with historian of Chinese medicine, Vivienne Lo, and Persian

<sup>634</sup> Berlekamp 211

literature specialist, Wang Yidan, have represented the visual, editorial, and translation choices of Rashīd al-Dīn and his team as less-than-honest in representing concepts they deem to be in conflict with Islam. Examined within the material and pedagogical practices of Yuan-Ilkhanid medical education, the broader body of work of Rashīd al-Dīn, and the historical context in which he operated, this assessment appears to be the projection of modern scholarship.

The *Tansūqnāma* should be assessed within the context of the physical and intellectual space for which it was created. It was not a book meant to be legible to the literary elite or patrons of visual art in the Ilkhanate. It was not conceived as an *objet d'art* but as a textbook infused with the pedagogical practices of both Persianate and Chinese medical education, and as a field guide to cultivating diagnostic ability in the fingertips and the mind. It was a working book, a text book meant for students who traveled to Tabriz from multiple corners of the world to be trained in the medical school of Rashīd al-Dīn's educational complex. The endowment deed of the complex and the introduction to the *Tansūqnāma* make clear that he provided for physicians and teachers from across the world, including China, and a rotation of guests through the *khanaqa* attached to the building to be continually on site. <sup>635</sup> A medical student at the *Rab'-e Rashīdī* would not have been left to their own devices with the *Tansūqnāma* or expected to make sense of it outside of the circle of cosmopolitan scholars in which they learned to practice. It was inside this network of cross-cultural, human-to-human education that the *Tansūqnāma* rose to its purpose as a guidebook and tactile education of the senses.

<sup>&</sup>lt;sup>635</sup> See Sheila Blair, "Ilkhanid Architecture and Society: An Analysis of the Endowment Deed of the Rab'-i Rashidi," in *Journal of Persian Studies/Iran*, Vol. 22 (1984):67-90.

#### Part III:

# A Reconsideration of the Tansūqnāma

Tú images of the body's interior reproduced from earlier Song Dynasty texts sit like nesting dolls within later compilations like the *Tansūqnāma*, recalling the eviscerated flesh of the past packaged inside new claims to knowledge and medical legitimacy. The images are indexical of specific bodies, in specific places, and the knives and powers of observation of the specific officials and physicians who rendered them into ink. As the images circulated in new kinds of texts, they staked out lines of genealogical, epistemic descent and authenticity, but not just as the visual offspring of Ōu Xīfān's body, but as the bloodline of violent witness to previous acts of knowing. The recent focus on the genealogy of these images and Rashīd al-Dīn's motives for excluding or obscuring them has diverted attention from why he included them and what about them he regarded as valuable. The text and images in the manuscript were not intended to primarily train the eyes, but the skin. The *Tansūqnāma* provided the necessary conceptual background to guide and interpret the sensations felt through palpation at the wrist.

Scholarly discussions of the  $Tans\bar{u}qn\bar{a}ma$  have focused, in recent years, on the lines of transmission of the images, and on whether or not their method of selection for the manuscript represented a hypothesized fear of Islamic religious repression or a failure of cultural translation on the part of Rashīd al-Dīn. Analysis has centered on the reproduction of  $t\acute{u}$  images in the manuscript, in part, because the paleography and phonetics of the text reflect the incredible

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<sup>&</sup>lt;sup>636</sup> See Persis Berlekamp, Vivienne Lo, and Wang Yidan, "Administering Art, History, and Science in the Mongol Empire: Rashid al-Din and Bolad Chengxiang," in *Pearls on a String: Art in the Age of Great Islamic Empires*, Amy Landau, ed. Seattle: University of Washington Press. (2015):53-85.

<sup>637</sup> See Miyashita, Berlekamp, Lo and Wang

linguistic and cultural complexity of its production in Ilkhanid Iran. Its rendering of Chinese into Persian in a less-than-straightforward script, and phonetic representation of Chinese using *Xiao'erjing* Perso-Arabic letters and diacriticals requires a modern level of expert collaboration that would need to echo the transcultural teamwork responsible for its original production.

Modern evaluation of the *Tansūqnāma* images has focused as much, if not more, on what images are *not* present in the manuscript and on what Rashīd al-Dīn did *not* do with them, than on what is actually present in the manuscript and to what effect. This approach has been deeply critical of Rashīd al-Dīn's visual choices and has been used as a basis to characterize his efforts at cultural translation as a failure by Berlekamp<sup>638</sup> and self-censorship by Lo and Wang.<sup>639</sup> For example, Berlekamp argues that the lack of an outline of the body around images of the organs or of an introductory diagram that includes the organs within the frame of the whole body distorts the meaning of the images to be more compatible with Islamicate understandings of anatomy.<sup>640</sup> She characterizes this, and the absence of captions to accompany the images, as an "obfuscation" of the "Chinese cosmology" of the source material.<sup>641</sup> It is unknown if the *Tansūqnāma*'s scribe, Muḥammad ibn Aḥmad ibn Maḥmūd, drew the images in the manuscript, or if that work was completed by some other person. Either way, we must remember that the images in the *Tansūqnāma* are drawn with ink by hand, they are not reprints from original woodblocks that contained captions. We should not assume that the *Tansūqnāma* artist sketched

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<sup>638</sup> Berlekamp 2010

<sup>&</sup>lt;sup>639</sup> Vivienne Lo and Wang Yidan, "Chasing the Vermillion Bird: Late-Medieval Alchemical Transformations in the Treasure Book of Ilkhan on Chinese Science and Techniques," in *Imagining Chinese Medicine*, Vivienne Lo and Penelope Barrett, eds. Leiden:Brill. (2018):291-304.

 $<sup>^{640}</sup>$  Ibid 224

<sup>&</sup>lt;sup>641</sup> Ibid 228

them by looking at a printed page from a Chinese book, there are important reasons to think he might not have.

We know that Rashīd al-Dīn relied on a core team of Persian researchers and Chinese experts to produce the *Tansūqnāma*, and we know from his introduction and the body of the text that his team used *Xiao'erjing* to phonetically render spoken Chinese into a specialized form of Perso-Arabic script. This was common practice for Muslims living or operating in China and examples of this script survive from multiple regions and arenas of life.<sup>642</sup>

At the time of the production of the *Tansūqnāma*, it was not practical for most long-distance travellers to sail or ride with extremely large quantities of books, which were heavy and easily damaged by the elements. Small notebooks often served as commonplace books to collect relevant images and texts while you travelled. Writing (and drawing) on the road was an important part of medieval Persianate literary practice, with relevant material assembled into collections. Anthologies of various types became an increasingly important part of the culture of travel and collection in the fourteenth and fifteenth centuries, with the names of two forms of anthologies explicitly evocative of sea-travel. Collections like *majmū'a*, *jung*, and *safīna* allowed a portability for important materials and the personalization and objectification of one's experiences of the world. After the body, as the primary site of collection, written scrapbooks and notebooks like the *jung* (عنگ), which shares the Persian name for a Chinese boat, 644 and the

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<sup>&</sup>lt;sup>642</sup> See forthcoming article on translations from the Java Sea Wreck by Amanda Respess, Lisa C. Niziolek, Peng Weibin

<sup>&</sup>lt;sup>643</sup> See David J. Roxburgh, *The Persian Album: 1400-1600, From Dispersal to Collection.* New Haven: Yale University Press, 2005.

<sup>644</sup> Many thanks to Kathryn Babayan for pointing this out.

safīna (سفينة), which was also named for and shaped like a boat and could be worn on the body for maximum portability and protection, became important sites of collection for foreign materials. The Tansūqnāma, itself, is a rendering of a majmū'a (مجموعه) of collected texts and images from multiple Chinese sources. It is a collection. It is very possible that one of Rashīd al-Dīn's informants sketched versions of the images we now see in the text from printed books, and that the Tansūqnāma's ink drawings are based on those sketches from his notebook, rather than on tú from a printed book. Both are certainly possible, but this process conforms with the material culture of travel in the fourteenth century and would certainly explain the lack of captions, particularly for a Persian Chinese-speaker who used Xiao'erjing, and not Chinese characters, to record the meanings of what he saw.

Nevertheless, Berlekamp finds the lack of captions on the images distorting and writes that the absence of framing outlines of the body in the *Tansūqnāma* dissection images "is at odds with the salient point of the chapter within the framework of Chinese medicine." This evaluation does not take into consideration that the absence of an outline is consistent with how this type of image was used in medical contexts in China. In fact, Despeux has written that Chinese diagrams of the body fell into three separate categories, "exemplifying three different approaches to the body." First, "images of the whole body approached from the exterior," second, "images of the inside of the body, i.e. the internal organs and the skeleton (which raises issues regarding dissection);" and finally, "images of the symbolic body, i.e. alchemical processes

<sup>&</sup>lt;sup>645</sup> Ibid 152

<sup>&</sup>lt;sup>646</sup> Ibid 223

<sup>&</sup>lt;sup>647</sup> Despeux 2018:53

within the body and the true form of the allegorical body."<sup>648</sup> Additionally, Despeux makes clear that "the late Five Dynasties (mid-10th century) and Song periods saw the rise of an image type that does not set out to depict the body as a self-contained whole with head, trunk and limbs outlined; instead the torso and internal organs are drawn without any surrounding contours."<sup>649</sup> This places Rashīd al-Dīn's selection of images directly within the textual medical tradition of China, and is not, as Berlekamp argues, an attempt on his part to Islamicize or distort Chinese medical cosmology.

The bodies depicted in the dissection images in the *Tansūqnāma* belonged to historically identifiable people, and their original production was an exercise of Song imperial power over rebels and criminals in the southern frontier. The appropriation and increased circulation and collection of these images under Mongol rule recontextualized them into new configurations of state power and authoritative medical knowledge, but the Mongols would have had no interest in humanizing the viscera of executed southern rebels with depictions of the exteriors of bodies. It is important to not only think about the *Tansūqnāma* images visually, but historically. Evaluating scientific diagrams strictly as art erases their function. Even the diagrams from the manuscript that are deeply symbolic representations of the cosmos are not rendered for artistic resonance, but as orienting guide maps for the fingers and minds of students learning pulse palpation and diagnosis, they are extensions of the body. Even the most esoteric images in the *Tansūqnāma* are there to organize and enable clinical thinking and sensitive palpation skills. The forces depicted in the diagrams are alive at the wrist, in spatial and symbolic alignments

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 $<sup>^{648}</sup>$  lbid

<sup>&</sup>lt;sup>649</sup> Ibid 57

In Chasing the Vermillion Bird, 651 Lo and Wang argue that Rashīd al-Dīn held inner "conflicting" beliefs about the landscape of the inner body" based on their reading of a passage in the manuscript describing "animal spirits" that circulate in association with the heart and its vessels.<sup>652</sup> They misidentify the meaning of an Arabic term, and confuse the physiological map of spirits presented by Galen. Their assumption is that what they are reading is a whitewashed projection of an Islamicate theory of bodily spirits written over an entirely different Chinese mapping of circulation. Because of their mistranslation, they misconstrue what is happening in the passage and miss that it is a subtle comparison of the Galenic model of bodily spirits with the Chinese concept of "animal spirit" or "corporeal spirit" in relationship to the generation of spirit (shen) more broadly in the body. They combine their assessment of this passage with the fact that there are Chinese bodily diagrams used in the literature of Chinese meditation that do not appear in the *Tansūqnāma* to argue that Rashid al-Din rejected Daoist images of the body and concealed them willfully. They present absolutely no evidence that Rashīd al-Dīn had access to the meditation images in question, 653 and they fail to address why he would have included them in a manuscript based on the Yuan medical curriculum, if he indeed, did possess them. Ironically, the image they argue Rashīd al-Dīn would have objected to on religious grounds is of a series of spirit animals associated with the body's internal organs. The image they use to drive

 $<sup>^{650}</sup>$  For an in-depth analysis of the cosmological images and text discussed by Berlekamp, Lo, and Wang, see APPENDIX II

<sup>&</sup>lt;sup>651</sup> Vivienne Lo and Wang Yidan, "Chasing the Vermillion Bird: Late-Medieval Alchemical Transformations in the Treasure Book of Ilkhan on Chinese Science and Techniques," in *Imagining Chinese Medicine*, Vivienne Lo and Penelope Barrett, eds. Leiden:Brill. (2018):291-304.

<sup>&</sup>lt;sup>652</sup> See APPENDIX II for translation and in-depth analysis

<sup>&</sup>lt;sup>653</sup> They wrongly assert that the *Tansuqnama* images are derived from a Daoist text where the meditation images also appear as reprints in the Ming dynasty

their analysis is, ironically, a phoenix, or vermillion bird, associated with the heart. They write, "the selection of illustrations in the *Tansūqnāma* demonstrates that Rashīd al-Dīn's religious sensibilities were challenged by the medieval Chinese Daoist adoption of anatomical texts for meditation purposes, and by the image of the human body as embraced within the influence of, and inhabited by, the planets, stars, and their spirits." The heart of the Persianate world had long been inhabited by the phoenix, and this was nowhere made more explicit than in Iran's relationship with China, where the Muslim body politic, itself was conceived of as a phoenix. 654

## Ibn Sina's Soul and the Collection of Knowledge

Berlekamp argues that the *Tansūqnāma* failed because of "the degree to which medieval Islamic medical theory was rooted in Galenic traditions and Chinese medicine was not." She concludes that despite the long years of work between the intercultural members of the manuscript production team in Tabriz, that their medical knowledge was "ultimately incompatible" and that even the visual imagery in the manuscript failed because it was not "a universal language; on the contrary, it was only understandable through deeply rooted paradigms of ultimately cosmological thought." Her assertions are simultaneously historical and anthropological. She states, like many, that the Mongol milieu created the only possible context for this level of intensive cultural exchange between Chinese and Persian physicians, which is certainly not the case, given the many centuries of intense medical contact between the two countries. The remainder of her claims are anthropological: that alterity renders knowledge and

<sup>&</sup>lt;sup>654</sup> See Chapter 2

<sup>&</sup>lt;sup>655</sup> Ibid 229

<sup>&</sup>lt;sup>656</sup> Ibid 230

<sup>&</sup>lt;sup>657</sup> Ibid 229

cosmology inaccessible, untranslatable, and incompatible, even after many years of communication, translation, bilinguality, and intercultural teamwork. But Berlekamp, Lo, and Wang ultimately argue that Rashīd al-Dīn attempted to conceal these differences rather than accurately translate them. They argue that for the sake of Galen, he distorted Chinese medicine.

Physicians are, perhaps, the highest-stakes epistemologists in society. The inner workings of how they acquire knowledge and detect the causes and nature of an illness to discern meaningful action infuse their diagnostic methods simultaneously with the immediacy of life-or-death risk and careful philosophical heft. The practice of medicine is philosophy with a body count. How to recognize the cause, nature, and status of disease in a patient was an intense preoccupation of physicians in the late-medieval Islamicate world, who engaged deeply with Ibn Sina and an influx of foreign substances, diseases, and theories from across the trade routes. For Rashīd al-Dīn, failed medical epistemology was the pretext for the violence that ended his life.

Galen was not received passively by Islamicate medicine. Arguing with Galen or reformulating his map of the body and spirits was taken up by physician-philosophers of every generation. Ibn Isḥāq developed and standardized some of his ideas, while subsequent thinkers discarded others, or made changes and interventions. The nature of exchange through the translation movement was not characterized by the passive transmission of concepts and body maps wholesale, it was a generative engagement that combined multiple textual traditions, bore fruit, and entailed differences of opinion. When Rashīd al-Dīn writes, "according to what they say," it does not equal an endorsement or proclamation of faith. He framed his intervention with the *Tansūqnāma* explicitly as the carrying forward of the epistemic project of the translation movement with an

eastward gaze, but the direction of that gaze had long been focused on China as a source of knowledge, wonders, and drugs.

By the time of Rashīd al-Dīn, Islamicate physicians were less Galenic than they were Avicennian about the soul and the distribution of its powers through spirit and flesh. Doctors had pragmatic leeway in continuing to structure their clinical treatments through the physiological model found in Galen and ibn Isḥāq, but the structuring of their thoughts and epistemologies came increasingly from Ibn Sīnā. The question of how we know what we know, and how we know what to do about it, especially important matters for doctors, were taken up afresh by Ibn Sīnā, and his answers were rooted in his disagreement with Galen.

Ibn Sīnā articulated a material and immaterial anatomy that accounted for the traditional powers of the tripartite Galenic spirits in the brain, heart, and liver with a new mapping that distributed them under a different, single organizing principle. Participating in a long line of arguments stretching back to Hippocrates and Plato about the relative materiality of the soul and whether or not it was distinct from or knitted to the body, Ibn Sīnā articulated a new center for the powers Galen had localized in the brain and heart.

In his thought experiment known as the floating man in *al-Shifa*, Ibn Sīnā painted a portrait of the ontology of the self, or the soul (*nafs*) and its relationship to the body. This relationship is fundamental to our understanding of medieval epistemology and can shed light on the exchange of practices and texts across the trade routes intended to better identify the nature of human physiology and diagnostics. In his thought experiment, the floating man comes into being in the darkness of space, with none of his limbs making contact with any surface. In this space he is

aware of his own being without access to the sensory data normally available to a sentient human. Ibn Sīnā uses this image to illustrate the nature of the self, or the soul, and to demonstrate its relationship to embodiment. Despite the lack of all physical sensation and data, the soul is aware of itself. After demonstrating this aspect of sentient knowledge and self that is distinct from the body, Ibn Sīnā maps out a physiology of perception that links the immaterial faculties of the soul to the material and spiritual faculties of the flesh. This account of how knowledge is produced within an individual from encounters with physical existence became canon<sup>658</sup> for late-medieval Islamic thinkers.

For Ibn Sīnā, once the soul is associated with (but not bound within) the body, it has inner powers of perception that function independently but also in alliance with the body's sensory perception during earthly life. If our floating man's inner, or spiritual, perceptive abilities partner with his fingertips, he engages a symphony of knowledge-seeking and knowledge-processing faculties that unite flesh and spirit to present him with facts about matter and the meanings of forms, which will, together, generate insight and responsive action. Pragmatically, this is a cognitive flowchart for physicians who must assess the signs and symptoms in a patient's body with their own senses, make meaning of what they encounter, and generate therapeutic action. But where Ibn Sīnā differs from Galen and Aristotle is in locating this unification of the soul outside the body, while it serves as the organizing principle for perceptive experiences the body makes possible.

A primary metaphor for the soul's knowledge-seeking activities used by Ibn Sīnā is collecting,

<sup>658</sup> Pun intended.

186

the soul is a collector of spiritual and mental faculties, and knowledge a collection. The soul (nafs) in this formation becomes "what gathers" (al-mujamī) <sup>659</sup> while the body receives as al-qubul. <sup>660</sup> The soul is a curator and the body a museum, or another way, the soul is a traveller collecting images, texts, and sensory experiences, and the body is the commonplace book or treasure boat (jung), that receives them. Ibn Sīnā had imagined the soul as a bird flying eastward towards the light. In the prologue to his Risālat al-Tayr (Epistle of Birds), a predecessor and influence of 'Aṭṭār's Manṭiq al-Tayr, he writes, "Be ever in flight; choose no settled nest, for it is in the nest that all birds are captured. If you have no wings, steal wings" The Persian merchants who survived the violence in Quanzhou at the Yuan-Ming transition took flight to ports in Southeast Asia and to rural areas in the countryside, far afield from maritime trade. The remainder of this chapter examines the events that led to the massacre, and the twilight of premodern Chinese-Persian medical exchange.

## The End

Song epidemics had not only been a driver for medical publishing in China, but of social unrest that would also impact the Yuan and Ilkhanid spheres with increasing intensity. Hymes has hypothesized that a report of Mongol pestilence in 1211 by the chief minister of the Jin may represent an early outbreak of plague, carried from the Tangut reservoir in the Xi Xia. 662 The conquered Xi Xia territory has been identified as the likely source of *yersinia pestis*, and similar

<sup>&</sup>lt;sup>659</sup> el-Bizri 155

 $<sup>^{660}</sup>$  Ibid

<sup>661</sup> Corbin 1960:187

<sup>&</sup>lt;sup>662</sup> Robert Hymes, "Epilogue: A Hypothesis on the East Asian Beginnings of the Yersinia Pestis Polytomy," in *Medieval Globe* Vol. 1, No. 1 (2014): 289.

accounts of epidemics associated with the path of the Mongol invaders have been reported throughout Eurasia.<sup>663</sup>

Hymes described epidemics associated with the movements of the Mongol army in 1213-1222, again in 1226, and in 1232 and 1233 after the Mongols took Kaifeng. The epidemic that swept through the city after the Mongol conquest inspired physicians like Li Gao to revisit and revise traditional treatments for cold damage. 664 Additional epidemics associated with the Mongol army spread to Sichuan by 1258.665

The years 1310 and 1311 witnessed an intense period of activity and change for Persian Muslims in the Mongol empire. First, the Sunni Ilkhan Öljeitü converted to Shi'ism in Iran. In China, the Aṣḥāb mosque in Quanzhou was rebuilt and a domed vault, which still stands, was added by Ahmad b. Muhammad Quds, from Shiraz. 666 The Muslim community of Quanzhou found itself under intensifying pressure under the Yuan with changing regulation impacting maritime trade networks.<sup>667</sup> In 1311, the special powers and privileges enjoyed by gadis in the Muslim quarter for generations were limited by the government. 668 The next year the sheikh, Burhān al-Dīn, moved from Kazerun to Quanzhou to head the Sufi order. 669

 $<sup>^{663}</sup>$  Ibid

<sup>&</sup>lt;sup>664</sup> Hymes 289

<sup>&</sup>lt;sup>665</sup> Hymes 292

<sup>&</sup>lt;sup>666</sup> Chen 4, according to inscription inside mosque

<sup>&</sup>lt;sup>667</sup> Chaffee in Schottenhammer 117-119

<sup>&</sup>lt;sup>668</sup> Chafee 2018:156

<sup>&</sup>lt;sup>669</sup> Chen 17

It is against this backdrop that the final events of this chapter unfold. In 1312, Rashīd al-Dīn presented his collected works to Öljeitü,<sup>670</sup> and the following year his team completed the *Tansūqnāma*. Around this time he also supplemented the endowment deed to the *Rab* '-*e Rashīdī* to affirm his long relationship with Öljeitü.<sup>671</sup> The giving of gifts is understood anthropologically to cement reciprocity and alliance and materialize kinship relationships and responsibilities between people and groups.<sup>672</sup> Mauss has argued that there is a "power" in objects of exchange that "forces them to circulate," to be given and to be repaid.<sup>673</sup> Rashīd al-Dīn's presentation of his collected works and completion of the *Tansūqnāma* was followed by his completion of the *Jāmi' al-Tawārīkh*, that great reminder of lineages and loyalties and survey of the histories of the groups encountered by the Mongols.

Before Öljeitü's death in 1316, Rashīd al-Dīn's wealth and income had become a topic of discussion at court.<sup>674</sup> After Abū Sa'īd succeeded his father as the Ilkhan, and Rashīd al-Dīn was executed, his possessions were plundered, and eventually his bones were disinterred.

A decade later the smaller losses felt by the Muslim community of Quanzhou began to add up. In 1328 the government abolished the authority of qadis over the community, newly subjecting the Muslim population to external authority and the following year traditional tax exemptions for religious leaders were eliminated.<sup>675</sup> Within the next five years, the merchant communities of

<sup>&</sup>lt;sup>670</sup> Hoffman 12

<sup>671</sup> Hoffman 12

<sup>&</sup>lt;sup>672</sup> See Marcel Mauss, *The Gift: Forms and Functions of Exchange in Archaic Societies*. Ian Cunnison, trans. London: Cohen and West, [1924]1954. and Claude Lévi-Strauss, *Elementary Structures of Kinship*, James Harle Bell, John Richard von Sturmer, trans. Rodney Needham, ed. Boston: Beacon Press, [1949] 1969.

<sup>673</sup> Mauss 1954: 41

<sup>674</sup> Hoffman 13

<sup>675</sup> Chaffee 2018:156

Songjiang, Jiaxing, and Hangzhou were hit by waves of epidemic illness sweeping southern china.<sup>676</sup> The next decade witnessed flooding of the Yellow river, famine, and increased changes in the policies impacting the Muslim community, including marriage laws.<sup>677</sup> In 1344, an epidemic hit Fujian.<sup>678</sup>

Upon the death of Abū Sa'īd in 1335, the Ilkhanate lost its cohesion and eventually dissipated into rival claims. In 1346, plague hit Tabriz and the rest of Azerbaijan and spread through the Caucasus and to Syria.<sup>679</sup> The societal strain of illness in Fujian was amplified by the increasing activity of rebel pirates on the coast and rebellions against the Mongols began to rock the country.<sup>680</sup> Life for Persian merchants in Quanzhou was unsettled by the chaos in the Persian Gulf and increasing discontent across China. By the late-1340s, the Qingjing mosque where Burhan al-Din was serving as imam had become dilapidated and in need of repair.<sup>681</sup> As rebellions became increasingly frequent in Fujian, the Mongol government created *semu* garrisons to uphold Mongol control.<sup>682</sup> In 1351, the Yuan conscripted thousands of people to dredge the Grand Canal and attempt to reroute the river.<sup>683</sup> Uprisings in the south continued in earnest.<sup>684</sup>

<sup>&</sup>lt;sup>676</sup> Hymes 2014:299

<sup>&</sup>lt;sup>677</sup> Tan 97, Chaffee 2018:156

<sup>&</sup>lt;sup>678</sup> Hymes 2014:299

<sup>679</sup> Fazlinejad and Ahmadi 57-65

<sup>680</sup> Lo Jung-Pang 2012:vi

<sup>&</sup>lt;sup>681</sup> Chen 16-17

<sup>&</sup>lt;sup>682</sup> Ron Harris, *Going the Distance: Eurasian Trade and the Rise of the Business Corporation.* Princeton: Princeton University Press, 2020, 182-183.

<sup>&</sup>lt;sup>683</sup> Tan 97

<sup>&</sup>lt;sup>684</sup> Lo Jung-Pang 2012:vi

In 1357, two Persian garrison commanders stationed in Quanzhou, named Sài Fǔ Dīng (賽甫丁) and Ā Mí Lǐ Dīng (阿迷里丁), raised a rebellion against the Yuan and seized control of the city and other towns up the Fujian coast. The occupation of Quanzhou and other parts of Fujian has come to be known as the Persion Garrison or Ispah (Yisibaxi 亦 思 巴系) rebellion, for the Farsi, w sipāh or سياهي sipāhī (army, military, militia). 685 Persians retained military control of the region for almost a decade. In 1362, a Muslim maritime trade official and purported son-in-law of the Pu family named Ā Wū Nà 阿巫那 or Nà Wù Nà 那兀納 killed Ā Mí Lǐ Dīng and seized power in Quanzhou. 686 He seems to have then carried out a long-term campaign against the party of Sài Fǔ Dīng.<sup>687</sup> As pointed out by Abt, Nà Wù Nà's assumed affinal relationship to Pu Shougeng, specifically, does not seem to be supported by available historical records or the conflicting timelines involved, but he is believed to have married into the Pu family and this connection is used as a major device in a historical novel called *Lishi*. 688 His connection to the Pus has framed popular understandings of the nature of the rebellion and established him in the mythology of southern China as one-in-a-pair-of villainous bookends that typify semu/Muslim betrayal of the Chinese, alongside Pu Shougeng.

Maejima has compiled and translated selections from multiple historical sources from Quanzhou and Fujian that record the names and dates of key events and players during the rebellion, and make clear that there was an enormous amount of violence and bloodshed in Fujian for a

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<sup>&</sup>lt;sup>685</sup> Shinji Maejima, "The Muslims in Ch'üan-chou at the End of the Yuan Dynasty," in *Memoirs of the Research Department of the Toyo Bunko, Part 2*, Vol. 32, (1974):49.

<sup>686</sup> Fújiàn Tōngzhì, in Tōngzhì 266 福建通志, in Maejima 1974:55; Chaffee 2018:157

<sup>687</sup> Ibid

<sup>&</sup>lt;sup>688</sup> Oded Abt, "Muslim Ancestry and Chinese Identity in Southeast China," *Ph.D. dissertation* (Tel Aviv University, 2012), 296.

sustained amount of time.<sup>689</sup> Much more analysis is necessary to contextualize these sources and narratives within the larger wave of anti-Yuan uprisings occurring around the country at the time, the breakdown of Yuan rule in the south, and to penetrate the mythology, propaganda, and partisan and anti-Muslim polemics that have framed accounts of what remains. Abt has suggested that the rhetorical strategy adopted in Ming histories to depict the protagonists of the rebellion, and Muslims in Quanzhou generally, may have been meant to distinguish the legitimacy of the Ming dynasty's roots in violent rebellion from other potential claimants to power.<sup>690</sup>

Chen Dasheng argues that Sài Fǔ Dīng and Ā Mí Lǐ Dīng were Shi'i and were able to originally take the city with the help of other Shi'i soldiers who had been stationed in Quanzhou by the Mongols. He argues that Nà Wù Nà was Sunni, and characterizes this period of conflict in and around Quanzhou as a sectarian civil war between Muslim factions. <sup>691</sup> Chaffee has nuanced this as potentially also involving competition between the interests of garrisoned Muslim soldiers, who were comparative newcomers to the city, and multigenerational merchant families with deeper roots in China from involvement with maritime trade. <sup>692</sup> Religious, economic, and cultural differences within the Muslim community were likely contributors to the divisions that turned violent at the end of the Yuan, but it is important not to characterize the solder/merchant difference as mapping strictly along lines of Shi'i/Sunni belief. The merchant community of

<sup>&</sup>lt;sup>689</sup> Maejima 1974

<sup>&</sup>lt;sup>690</sup> Oded Abt, "Muslim Memories of Yuan-Ming Transition in Southeast China," in *Political Strategies of Identity Building in Non-Han Empires in China*, Francesca Fiaschetti and Julia Schneider, eds. Wiesbaden: Harrassowitz Verlag, 2014, 166-167.

<sup>&</sup>lt;sup>691</sup> Chaffee 2018:158

<sup>692</sup> lbid

Quanzhou had been home to multiple mosques, traditions, and professions of faith long before the Mongols became a complicating factor. It is significant that Nà Wù Nà is caricatured in the *Lishi* with extremely symbolic actions related to southern Chinese sentiment about the changing position of the local Muslims, he is described as seizing the land of a Chinese family and "buil[ding] there the temple *Fanfo Si* 番佛寺.<sup>693</sup> He then embellished the temple to the extreme, storing in it treasures that he had stolen from elsewhere."<sup>694</sup> The tropes we see here are familiar. In addition to descriptions of battles and episodes of violence three instances stand out from the historical records, Nà Wù Nà is reported to have emptied the storehouses and conscripted Chinese people into dredging the river and repairing the Quanzhou city walls.<sup>695</sup>

Because of the mass destruction of property and human life that erupted after the events in Quanzhou during the end of Mongol rule, it is extremely difficult to make sense of what, exactly, occurred. This was a profound period of unrest throughout Fujian province, fleets of rebel pirates controlled other areas and ports on the coast and the usual pattern of Mongol governance had completely failed. As was the case with other rebel-held territories on the coast, the Mongol court still appointed official representatives to communicate with the garrison leaders during the rebellion. But other rebellions had broken out across China, many operating under the auspices of Maitreyan Messianic and other Buddhist groups, who agitated for an end to Mongol rule, a return to Chinese tradition, or the advent of a new age, depending on the context. Some

<sup>&</sup>lt;sup>693</sup> "Foreign Buddha Temple," in this case, mosque.

<sup>&</sup>lt;sup>694</sup> Abt 2012:296; Abt 2014:163

<sup>&</sup>lt;sup>695</sup> From a source quoted in the *Bamin Tōngzhì*, *Fújiàn Tōngzhì*, in Maejima 1974:61

<sup>&</sup>lt;sup>696</sup> Chaffee 2018:158

<sup>&</sup>lt;sup>697</sup> See Ma Xisha, "The Syncretism of Maitreyan Belief and Manichaeism in Chinese History," in *Popular Religion and Shamanism*, Ma Xisha and Meng Huiying, eds. Leidan: Brill, 2011.

of these groups across China have been characterized as syncretic Manichaean "incense armies," which would associate them with Persian religion and merchants, and there was, in fact, a Manichean community in Quanzhou whose temple survives today. Maejima suggests the Ispah rebellion may have begun as a "vigilance corps" or militia for community protection in the face of the breakdown of Yuan society and escalating theft and violence. He suggests that rather than beginning with aspirations for conquest, the Persian community likely "aimed to the utmost at establishing a small, self-governing community of their own," which would have resembled life in the fanfang 蕃坊 (foreign quarter) before authority for limited selfgovernance had been stripped away. 698 He suggests that their interventions in conflicts playing out beyond the Quanzhou city walls may have played a role in the antipathy the Chinese felt for them as occupiers. 699 Whether Quanzhou's Persian garrison evolved into a sectarian religious conflict, an attempt to fill a vacuum of governance, a strategy to retain access to the harbor in the face of rebel pirates, or a cataclysmic scheme of plunder as later rhetoric suggests, is unknown. Nà Wù Nà was defeated and the Ispah forces in Fuzhou, Xinghua, Quanzhou, and Huian were eventually wiped out by the army of regional Yuan commander, Chen You-Ding, with collaboration from local Yuan sympathizers and warlords, in 1366.<sup>700</sup>

A horrific orgy of violence ensued. Quanzhou's community of Muslims were massacred, their mosques destroyed, and graves uprooted. In the dramatic account of the *Lishi*, after the fall of the Persian rebels, Chen You-Ding, now the Yuan governor of Fujian, closed the city for three days and massacred the Muslims, plundered their graves, and even killed Chinese people with

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<sup>&</sup>lt;sup>698</sup> Maejima 1974:69

<sup>&</sup>lt;sup>699</sup> Ibid 70

<sup>700</sup> Chaffee 2018:158, Abt 2014: 161-162

light hair or high noses.<sup>701</sup> Although this is a polemic source, the archaeological evidence supports the scale and scope of destruction. It claims that the Pu family was stripped naked, forced to face Mecca, vivisected with the "five mutilating punishments," and their bodies thrown into pig troughs. <sup>702</sup> It states, "In the late Yuan the sea was a bubbling cauldron. Great families scattered from their homes, which were burned by the soldiers, and few genealogies survived" <sup>703</sup> The era of Quanzhou's heyday was over.

Many Muslims fled China by sea to Southeast Asia, and others fled to rural areas where they could pass themselves off as non-Muslims. Over the centuries, many of these remaining families began to reclaim their roots in the sea trade with the Middle East and many have made efforts in recent years to publicly memorialize their Muslim roots. But the Aṣḥāb mosque now stands alone, its sanctuary in ruins, with piled up tombstones stored in side-buildings and the open air. After the Persian community was massacred at Quanzhou, refugees who had escaped the violence helped build the Muslim communities of Southeast Asia. The ceramic trade boomed in Vietnam and the world reconfigured its trade routes during the reticence of the Ming. When China reengaged on the ocean, its most public face was that of Zheng He, a Muslim. But the nature of coastal trade had changed, and Quanzhou's days as the port of Zaytun were forgotten.

<sup>&</sup>lt;sup>701</sup> Chaffee 160

<sup>&</sup>lt;sup>702</sup> In *Qingyuan jin shi* 222, Chaffee 2018:160

<sup>&</sup>lt;sup>703</sup> From Quanzhou huizu pudie ziliao xuan bian (1980):76 in Chaffee 160

<sup>704</sup> Roderich Ptak, Chaffee 2018:160

The near-extermination of the Muslim community of Quanzhou has been explained as the vengence of occupied southern Chinese who identified the semuren, as a class, with Mongol rule and the betrayal of Pu Shougeng. This undoubtedly fuelled the cycle of violence in Fujan. But the beginning of the violence, the three bloody days in Quanzhou, happened under Yuan command. Centuries of Muslim presence and coexistance in coastal China had shifted under Mongol rule into a political hierarchy based on ethnic, family, and religious origin. When Mongol governance fell apart in Fujian towards the end of Yuan rule, Quanzhou was ruled by Muslims for almost a decade. The vengeance of occupied southern Chinese commingled with early Ming consolidation of power and authority. This turn of events shut down Quanzhou's Persian trade with China, reshaped it and redirected it to other countries and other middlemen. The words of al-Sirafi in the aftermath of the Guangzhou massacre apply here, as well: "Because of the events that occurred there, the trading voyages to China were abandoned."705

The massacre of semuren at Quanzhou and the murder of Rashīd al-Dīn and extirpation of his lineage of loyalty to the Mongols share a vulnerability that came with the Mongol use of outsider middlemen to administer occupied territories. Rashīd al-Dīn, who endowed round-the-clock Qur'an recitation at the Rab'-e Rashīdī and built his tomb as an Islamic shrine, was executed because of the influence of competitors who wanted the power and wealth he had accrued in Mongol service, and they utilized suspicions about his outsider status as an ethnic Jew to attack his loyalty.

<sup>&</sup>lt;sup>705</sup> al-Sirafi 67

The centuries-long exchange of medical goods and knowledge between China and Iran changed forever with the massacre of Quanzhou's Muslims, who could no longer safely move from port to port. The reason the *Tansūqnāma* was not followed by a rush of further medical translations was not because it failed to do what Rashīd al-Dīn intended, but because both he and the population epicenter of medical exchange with China were exterminated. Both poles of medical exchange were killed. The cultural brokers that had united the Chinese coast with the Persian Gulf were murdered, and their survivors fled to safer shores.

#### **CONCLUSION**

I have argued in this dissertation that Eurocentric political discourse and mythology about ocean navigation have contributed dramatically to the erasure of premodern seafaring merchants from the Persianate world in both the popular imagination and in scholarly histories of the sea. An overreliance on purely discursive and narrative histories and methods endangers our remembrance of premodern historical actors whose lives in some way disrupt Modern master narratives about power and modernity. The danger of importing the genre of oceanic romance into Western historiography lies in what it has come to mean for empires and nation states and its ideological deployment in colonialism's quest to carve up the world. A Eurocentric shipwreck hermeneutic, to borrow a phrasing from Mentz, has not only divided the world geographically into Old and New, conqueror and conquered, but sliced history, itself, into two: before and after. Historical time has been measured by the yardstick of European conquests on the seas, and the discursive propaganda that has accompanied this symbolic regime is blinding. If we import a text-based oceanic hermeneutic backwards onto premodern actors and events, we are in grave danger of misunderstanding what we see. The material archive of shipwrecks in Southeast Asian and Chinese waters presents a different history than what we have seen in books, one where Modernity begins to look suspiciously premodern.

Like an archive, the accumulating evidence recovered from shipwrecks dated from before the ideological lightning strike of Modernity is buried under the weight of centuries of discourse and

imagination. The actual things themselves, the pieces of wood, the marine-life-encrusted ceramic shards, the corroded metals, the congealed plant, animal, and human residues on the surfaces of jars and in bone and teeth fragments, should be separated from expectation, from what we think we might encounter under the water. Studies of shipwreck inventories can read like laundry lists: this bowl has one crack and three chips, this votive is small and likely belonged to a member of the crew, this candlenut was recovered from a jar, this iron concretion contains a surviving piece of rattan... The water remains such a powerful "mythic element," that as an audience we want to demand from it drama and high stakes. The flash of Modernity's lightning can blind us to the fact that Modernity is a liar. So before we construct an analytic to counter the mythology, I argue for a space where we attempt to shelter shipwreck evidence from discourse that comes too soon, I argue that we count the candlenuts, and look into the faces of 55,000 bowls. Doing this painstaking archival work is when the lightning of Premodernity strikes back: early Arabic-Indic numerals appear where we didn't know they would be, 706 Muhammad's name is written on a Chinese bowl, a potter left a fingerprint on a medicine box that has lasted over 800 years, African ivory was onboard this vessel... Each of these small points of data gradually build up to pixelate an entire world. Even though the sea calls on our deepest fears and ambitions, methodologically- a shipwreck is not a poem, it is a place. To evaluate its evidence fairly requires that we also take inventory of the ideological narratives that frame our expectations about what we might find.

The differences between textual and material sources invite comparisons, what happens if we take a hybrid approach and read artifacts as texts, or texts as objects? I have examined storage

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<sup>&</sup>lt;sup>706</sup> See forthcoming article on inscriptions from the Java Sea Shipwreck by Respess, Niziolek, and Peng.

jars, ceramic glazes, star anise, mosque architecture, tombstones, and medical texts in these pages for clues about their trajectories of use. I have argued that the decontextualization of objects and manuscripts in museums and academic discourse has neutered them of their powers of testimony and concealed them from evidence. Re-centering the material culture of early globalizations rewrites worlds.

I have centered the medical and the body in this text, in part, because of the role that spices would come to play in the fractures of empire-building, but also because of the hidden intellectual history of the body as a vehicle of trade. As a portable being that moves across the waters, sickens and heals and seeks balance and relief: the body is a collector and a collection. The ninth through the fourteenth centuries witnessed a wonderworld of medical collecting in the eastern Indian Ocean, and that collecting inflects our material and intellectual lives today.

Shipwreck artifacts are the sacra of the dead. The Muslim memorial stones in the back lot of the Quanzhou Maritime Museum are jagged and wounded in ways that the tombstones on display in the museums throughout the city are not. The shattered stones outside, in the sun, are not photoready, and they are so badly damaged that their beautiful inscriptions and carvings are much harder to read, and more emotionally painful to display than the examples that are mounted for exhibition. The outdoor graves were obviously the hardest hit of those that have been recovered from the wave of violence that overtook over the city during the Yuan-Ming transition and changed the world. They are visually similar to the tombs on Lingshan Hill that are still visited by the families of the dead, but they do not share similar signs of remembrance, remnants of tinsel and flowers and the obvious marks of offerings. The tombs of Lingshan glowed in the

minds of Quanzhou's Muslim community in its heyday, but the broken tombstones behind the museum are spatially hidden and obscured by weeds and overgrown grass.

When we remember the dead we recall their places of birth, the conditions of their demise, and their great achievements and impact on our lives. Walter Benjamin reminds us in his On the Concept of History<sup>707</sup> that writing history is a confrontation between the past and the present and the paying of a debt to the dead. It is a form of grieving and remembering their names. The religious inscriptions on broken stones in Quanzhou recall snippets of prayers offered at their funerals, reminders that we are all like a wave flowing back to the ocean. The assembled who stood at the graves of ocean martyrs many centuries ago grieved individual lives. We are faced today with grieving a diaspora.

The world changed after the massacre of the Muslim community at Quanzhou. The model of the body and mind that was constructed through centuries of ocean travel, medical collecting, and translation by Persian merchants and thinkers was a premodern, globalized curiosity cabinet. The intellectual and material culture that blossomed into hybrid objects and taxonomies back in the Persian Gulf region, in turn, influenced the world. In this dissertation pharmacological prescriptions, the notebooks of travelers, and medical anthologies have been analyzed alongside the material objects that functioned as extensions of the body and embodiments of the power of foreign medicines. This maritime collection, and these collectors, have been lost not only on the seafloor through wreckage, but within the taxonomies of modern museums that obscure and

 $<sup>^{707}</sup>$  Walter Benjamin. "On the Concept of History," Henry Zohn, trans.  $\emph{Illuminations}$ , Hannah Arendt, ed. Boston: Houghton Mifflin Harcourt, [1940] 1968.

decontextualize their origins. To understand the intellectual and material history of the Early Modern period that followed, the bridge across the ocean these merchants built through centuries of continuity amid disruptions must be included in the frame of analysis. We owe them better. The taxonomies of collection that accompanied European colonialism in subsequent centuries have re-semanticized medical objects from this period and this place as booty while focusing almost exclusively on their aesthetics as treasure. The erasure of the functions of premodern medical, navigational, and scientific objects contributes to a white supremacist telling of the global history of science. The "aesthetics of decontextualization" has habituated the erasure of the dead, even among the well-meaning. Erasure threatens astrolabes in art museums, and medical manuscripts that defy easy categorization.

Premodern shipwreck artifacts present an opportunity to reconsider the meanings and past lives of the material culture of the past. The violence of the late-fourteenth and subsequent fifteenth and sixteenth centuries so destabilized the shape of long-distance trade on the earth's oceans that its deeper and abiding patterns were suppressed, though they persisted in altered forms. The archaeological record is corrective to these erasures and as more wrecks are studied, from more perspectives, the *longue durée* of premodern maritime globalizations will reshape not only our understanding of the past, but of the present.

# **APPENDIX I: Figures**



Figure 1: Changsha bowl from the Belitung Wreck, courtesy of the Asian Civilizations Museum.



Figure 2: Changsha bowl from the Belitung Wreck, courtesy of the Asian Civilizations Museum.



Figure 3:

Changsha bowl from the Belitung Wreck, courtesy of the Asian Civilizations Museum.



Figure 4:

Changsha bowl from the Belitung Wreck, courtesy of the Asian Civilizations Museum.



Figure 5:

Changsha bowl from the Belitung Wreck, courtesy of the Asian Civilizations Museum.



Figure 6:

Water jar excavated from Yangzhou grave, shows the back and front sides. Eighth or ninth century. From *Changsha yao*, Beijing: Zijincheng Chubanshe, 1996, Plate 87.



Figure 7:

Broken tenth- or eleventh- century bowl with design. From *Changsha yao*, Beijing: Zijincheng Chubanshe, 1996, Plate 170.



Figure 8:

Changsha bowl depicting scene of shipwreck, from *Shipwrecked: Tang Treasures and Monsoon Winds*. Regina Krahl, John Guy, J. Keith Wilson, and Julian Raby, eds. (Washington, DC: Smithsonian Books, 2010), 22.



Figure 9:

Storage jars from the Belitung shipwreck, courtesy of the Asian Civilizations Museum.



Figure 10:

Ilkhanid albarello shards, courtesy University of Michigan Museum of Art.

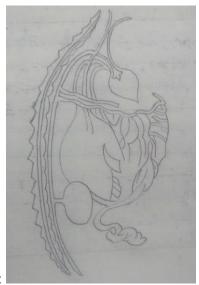


Figure 11:

Anatomical image from the *Tansūqnāma*.



Figure 12: Anatomical image from the *Tansūqnāma*.



Figure 13:

Taiji diagram from the Tansūqnāma.



Figure 14:

Ḥū tū shú diagram from the Tansūqnāma.

#### **APPENDIX II:**

## Selected Images and Textual Translation of the Tansūqnāma

# Cosmology, Medicine, and Blame

A useful approach to understanding the cosmological diagrams in the *Tansūqnāma* is to compare them not just to related images, but to other objects that demonstrate the relationships they depict. The ship that sank in Quanzhou Bay as the Southern Song dynasty fell apart at the end of the thirteenth century was recovered in 1973 and found to have seven coins and a mirror embedded between the forward and main sections of the keel. The coins were arranged in the shape of the Big Dipper, and their presence on the keel and position in relationship to the mirror has been understood to be symbolic of ritual protection at sea. The practice, called baosongkong or bǎo shòu kǒng, (bǎo shòumìng de kǒng, 保寿命的孔) has been documented in other boats from southern China and represents a practical and deeply spiritual invocation for navigational guidance at night. The Big Dipper, or Northern Dipper (Běidǒu 北斗) part of Ursa Major, is a major signpost of celestial navigation, with the tip of its bowl pointing directly at the North Star. Although the mirror in the bǎo shòu kǒng has been interpreted by archaeologists to

<sup>&</sup>lt;sup>708</sup> Jun Kimura 2016:70,80, 264

<sup>&</sup>lt;sup>709</sup> Jeremy Green, Nick Burningham, and the Museum of Overseas Communication History, "The Ship from Quanzhou, Fujian Province, People's Republic of China," in *International Journal of Nautical Archaeology*, Vol. 27, No. 4 (1998):277-301, 283.

<sup>710</sup> Quanzhou was a center of shipbuilding.

represent the guiding light of the moon on the ocean, navigationally and cosmologically it makes more sense that it would represent the North Star. Either way, the coins were likely offerings to the Dipper, or to Dŏumŭ, the Mother of the seven stars (often counted as nine in Daosit practice), in her role as the "essence of water," whose corporeal spirit (魄,  $p\dot{o}$ ) was embodied in the constellation and a guiding light to her fearful worshippers on the night sea. The seven visible stars of the Dipper represent the eyes, ears, nose, and mouth of human beings, causing the stars to "resonate immediately with people's minds within" through sensory experience, according to prayer instructions recorded in the Daoist Canon.

The cosmological symbolism of the Dipper and the *bǎo shòu kŏng* are surprisingly resonant with images and text found in the *Tansūqnāma*. The Dipper constellation was described by Sima Qian in the Han dynasty as the celestial "carriage of the emperor...placed in the center" of heaven and governing "the four cardinal points." It was understood as the line that divided "the yin and the yang," determined "the four seasons," and balanced the five phases. The earliest compasses in China were comprised of a lodestone-spoon shaped like the Dipper that maneuvered on a divining board representing heaven and earth. The placement of coins in the *bǎo shòu kŏng* mirrors the placement of stars in representations of the Dipper on these divining boards exactly, with the handle of the spoon pointed south, and the mouth indicating north.

<sup>&</sup>lt;sup>711</sup> Livia Kohn, "Doumu: The Mother of the Dipper," in *Ming Qing Yanjiu*, Vol. 9, No. 1 (2000):153, 166

<sup>&</sup>lt;sup>712</sup> Kohn 166

<sup>&</sup>lt;sup>713</sup> Sima Qian, *Shiji* (Historical Records), in Kohn 2000:156.

<sup>&</sup>lt;sup>714</sup> Joseph Needham and Wang Ling, *Science and Civilization in China*, Vol. 4, Part 1. Cambridge: Cambridge University Press.1962: 262

<sup>&</sup>lt;sup>715</sup> Ibid 263-265

 $<sup>^{716}</sup>$  Later navigational compasses used at sea utilized a magnetized needle floating in a bowl of water. The Song dynasty Intan shipwreck

As a "pivot between bipolar processes," the movement of the lodestone-Dipper differentiated all movement between yin and yang.<sup>717</sup> This essential cosmography infused medical philosophy and treatment, with the Dipper embodying the state of perfect balance and the maintenance of health. The directional orientation of the constellation informed the system of correspondences underlying medical cosmology and practice and shaped the mapping of relationships between yin and yang and the substances of the body.<sup>718</sup>

The mapping described above appears in the *taiji tú* [see Figure 13, *Taiji* diagram from the *Tansūqnāma*], the *luoshu* diagram [see Figure 14, *Ḥū tū shú* diagram from the *Tansūqnāma*], and the arrangement of the trigrams, all of which appear in the *Tansūqnāma*. These images are essential for communicating the underlying cosmology of medicine to students who will use the relationships and correspondences they learn from the diagrams in practice. The appearance of these images in the manuscript, however, have received criticism from Berlekamp, Lo, and Wang, who argue that Rashīd al-Dīn's choices in depicting them are evidence of fear of religious persecution in an Islamic environment.

Berlekamp speculates that "aspects of the diagrams or their explanations that most abruptly challenged... foundational cornerstones of medieval Islam may have been deliberately obscured" by Rashīd al-Dīn.<sup>719</sup> As support for this hypothesis she points to a "lack of recognition" in the *taiji* diagram in the *Tansūqnāma* "of yin and yang as discrete concepts beyond their associations"

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<sup>&</sup>lt;sup>717</sup> Adler 118

 $<sup>^{718}</sup>$  This symbolism was also present in the pharmacological and culinary use of the spoon to administer elementally balanced remedies.

<sup>&</sup>lt;sup>719</sup> Berlekamp 2018: 218

with other phenomena. The is the relationships and associations between yin and yang that define them and constitute all things within the body and cosmos through their transformations, so it is hard to imagine how they could be defined "as discrete concepts" outside of their relational and associative aspects. Berlekamp also asserts that the diagram and text omit adequate attention to the concept of *taiji* as "the supreme ultimate," however, the words "*taiji*," which roughly mean, "supreme ultimate," appear at the topmost part of the diagram within a red circle that visually generates the rest of the diagram, and this is also described in the text, as are yin and yang.

The *Tansūqnāma* characterizes the *taiji* as, "that which has nothing greater than it, and before which there was nothing," Berlekamp asserts that this "comment" "seems like an attempt to make the idea of the *taiji* palatable in a monotheistic context without equating it to God." In point of fact, Rashīd al-Dīn's phrasing that there is "nothing greater than it," is a more literal and accurate translation of *taiji* than the term "supreme ultimate" which has been popular in the West since the work of J. Percy Bruce in 1923. As has been pointed out by Atwood, *taiji* literally refers to the highest ridgepole in the roof of a house, the topmost beam that supports the roof and divides it into two halves, like the halves of yin and yang. The ridgepole-*taiji* is equated with the North Star as the pinnacle of heaven, and has also been translated as the "supreme pole" or

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 $<sup>^{720}</sup>$  Ihid

<sup>&</sup>lt;sup>721</sup> Berlekamp's translation of text found on 219

<sup>&</sup>lt;sup>722</sup> Ibid

<sup>&</sup>lt;sup>723</sup> See J. Percy Bruce, *Chu Hsi and His MAsters*, 1923 and Joseph A. Adler, *Reconstructing the Confucian Dao: Zhu Xi's Appropriation of Zhou Dunyi*, Albany: SUNY Press. 2014,119-120.

<sup>&</sup>lt;sup>724</sup> Atwood 2014:118

"supreme polarity."<sup>725</sup> In the mapping of the body it is equated with the center, or the heart. The placement of the seven coins and mirror on the Quanzhou ship are a useful way to think about this configuration. The Dipper and mirror design is embedded on the "ridgepole" of the ship's hull, on the keel or the spine of the ship that divides the vessel into two equal halves. But Berlekamp reads Rashīd al-Dīn's translation of *taiji* as an intentional omission of objectionable content and speculates that he doesn't linger on the meaning out of anxiety for voicing a creation concept out of alignment with heterodox Islamic thought. In addition to understanding the anachronism of this assessment, it is helpful to recall Atwood's observations of Rashīd al-Dīn's introduction to the *Jāmi* al-Tawārīkh, in which the expressed his willingness to retell the story of non-Islamic lands in their own words and based on their own sources, with their own miraculous and or polytheistic elements intact. Hoffman also remarks that Rashīd al-Dīn "pleads for the truthful transmission even of those traditions that were not in accordance with the worldview of a pious Muslim." This is in keeping with the intellectual trajectory of the translation movement with Rashīd al-Dīn identifies himself in the introduction to the manuscript.

Berlekamp also takes issue with other diagrams of the cosmos present in the  $Tans\bar{u}qn\bar{a}ma$ , and for similar reasons. She takes particular issue with the luoshu diagrams which are labelled, " $h\bar{u}$   $t\bar{u}$   $sh\dot{u}$ ." The border of each diagram has an arrangement of circles in differing numerical groupings representing all of the integers, one through nine. At the top of the image, which is labelled "south" ( $\dot{\varphi}$ ), a group of nine circles sits opposite a solitary one at the bottom of the

<sup>&</sup>lt;sup>725</sup> Ibid 121

 $<sup>^{726}</sup>$  Ibid

<sup>&</sup>lt;sup>727</sup> Berlekamp 2010:218-219

<sup>&</sup>lt;sup>728</sup> Atwood 223

<sup>&</sup>lt;sup>729</sup> Hoffman 5-6

page, which is labelled "north" (شمال). This directional orientation corresponds with the Daoist and folk count of nine stars making up the Dipper asterism, often represented by circles, which sits to the south of the North Star. This is the same symbolism found in the bǎo shòu kǒng coins and mirror embedded in the keels of southern ships. It represents the center of heaven and can be broken down into a ba gua or the nine palace positions which are used in pulse diagnosis. In the Tansūqnāma the luoshu outline is used to frame Rashīd al-Dīn's explanation of the relationships embedded in the five phases and trigrams. It is a sophisticated depiction of Chinese medical theory.

In the mythology of the *luoshu* diagram, a turtle emerged out of the river in a time of catastrophic flooding with the image on its back to help the people overcome the deluge. A divine message on a turtle shell is evocative of ancient oracle bone writing, but is also a symbol of heaven and its unity with earth. The circular shell of the turtle represents heaven, and the squared body represents earth. In the form of the turtle, they are united into one unity of yin and yang, like a perfectly balanced human body. The vessels and channels in the body that carry *qi* and other bodily substances are often described with the imagery of waterways, making a diagram that emerges from the pulse depicting the cosmological relationships between the *zang fu* organs a concise diagnostic map of pulse-taking. Berlekamp argues that the image of a tortoise emerging, inscribed with divine symbols "must have sounded squeamishly close to blasphemy" to Rashīd al-Dīn, and for fear that it be confused with "divine revelations," he willfully omitted the origin story from the text. <sup>730</sup> She writes, "whether by mistake or by design, the *Tansūqnāma* versions of some of the most important diagrams in Chinese cosmology

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<sup>730</sup> Berlekamp 222

undermined the system upon which the rest of the knowledge purportedly made accessible in this book was based."<sup>731</sup> This assessment appears to be based on a misunderstanding of the goals of Chinese medical education, and the purpose of the *Tansūqnāma* as a teaching text for specialists. The specific concerns she raises on many details of the images are too numerous to discuss further in this space, but they all share a decontextualizing frame that analyzes the images visually without adequate historical or medical depth. This framework, which misses the point and the function of the images, then misconstrues the motives of Rashid al-Din and accuses him of a hidden agenda.

Berlekamp asserts that, faced with material that was potentially blasphemous or "anathema in a medieval Islamic milieu, or even simply inaccessible," Rashīd al-Dīn "obscured" it, through willful concealment, sabotage, or error. This line of thinking appears to be rooted in the work of Islamic literary historian Felix Klein-Franke and Chinese medicine scholar Zhu Ming, who claim that Rashīd al-Dīn "reshaped the Tansuqnamah in the Spirit of Islam." Lo and Wang have taken this even further through an escalated ethno-social, near-psychoanalytic series of speculations about Rashīd al-Dīn's imagined inner world and motives in relationship to the fear of Islamic persecution. This has shifted the analysis of the *Tansūqnāma* away from the text to the imagined social pressures faced by Rashīd al-Dīn and the content of his inner world. It has also grossly mischaracterized the Islamicate translation movement and his own large body of work. A dishonest translator is like a poison-bearing cook, and in this mode modern

<sup>&</sup>lt;sup>731</sup> Ibid 223

 $<sup>^{732}</sup>$  Ibid

<sup>&</sup>lt;sup>733</sup> Felix Klein-Franke and Zhu Ming, "Rashid ad-Din as a Transmitter of Chinese Medicine to the West," in *Le Museon* (1996):398-399.

<sup>734</sup> See Lo and Wang

Tansūqnāma analysis has revisited and reproduced old antisemitic tropes uncritically. The status of Islam in the Ilkhanid court varied on a highly fluctuating basis, and the textual Islamic extremism hypothesized by Berlekamp, Lo, and Wang is anachronistic. What the manuscript and its creator include and omit have become an inkblot test of modern perceptions of the cultural and ethnic tensions in the Mongol empire. Without deeper historicization that more critically evaluates the archetypes in play in discussions of Rashīd al-Dīn, this is an ill-fitting analytical framework that essentializes cultural difference, caricatures Islam, and misunderstands medieval Persian literary practice and fourteenth-century medical education. The diagrams are not primarily meant to be interpreted by the eyes, but by the fingers.

#### Chart of the Heart Connections, Animal Spirits, and Collecting Knowledge

In much the same way that Rashīd al-Dīn's editorial choices related to images have been read by Berlekamp, Lo, and Wang as untrustworthy and misrepresenting Chinese source material, they have singled out a passage of the text as a site of concealment of true meanings and imposition of a white-washed Islamicate perspective. The passage in question deals with the heart and its circulation. The "discovery" of how the heart works and how circulation functions in the body may be the most politicized turf-war in global medical history. Who got there first, when, and how is a teleological tug-of-war that is redolent with cultural chauvinisms and territorial claims about science. Galen's model of blood production and circulation, Ḥunayn ibn Isḥāq's translation of the Greek into Arabic, Ibn Sīnā's treatment of this model in *al-Qānūn*, and the thirteenth-century work of al-Nafīs on the pulmonary transit of blood all predate the description of the heart and its vessels in the *Tansūqnāma*. Berlekamp, Lo, and Wang have pointed to this section of the manuscript for textual evidence of an agenda on Rashīd al-Dīn's part to obscure

potentially offensive Chinese concepts and overlay them with acceptable Greek visions of the body, but I argue here for a radically different understanding of this work, and on Rashīd al-Dīn's motives.

Lo and Wang argue that Rashīd al-Dīn has appropriated "Chinese illustrations to a Graeco-Roman Arabic vision" of the body for fear of representing them accurately in an Islamic context.

The passage from the *Tansūqnāma* in question reads:

On the explanation of the heart and its arteries, including all of its vessels, known as the 'Chart of the Heart Connections.' From the Heart there is a vessel that connects to all the vessel passageways of the organs. Now we will narrate how the animal soul is born, and also how it pours into the organs. According to what they say, the blood fluids are born in the Liver and, moreover, when it all ripens, there is a kind of vapour that flows into the Heart, and is nurtured there, changing into the animal soul. When one breathes the clear air into the Lung, then from the Lung the clear air arrives at the Heart. When the clear air from the Lungs arrives at the Heart, it fills it with this animal soul through the vessels to all the organs and to the extremities, and all the bones are filled with this animal soul. In this way when the animal soul goes quietly it is without illness and its nature does not change, and maintains that equilibrium, the organs are also healthy without illness; whenever this animal soul changes for the weaker or its nature changes, all the organs will be harmed by this. First, from the Heart there are three branches of the vessels that go to the Lung: one branch ascends; each one of the other two connects to a blood vessel branch, one branch goes right, and the other branch flows towards the door of the Lungs... straight to the Kidney organ. When it arrives behind the left and right Kidneys, then from the left and right Kidney it goes forward to the Bladder, and as it comes to the organ of the Bladder it begins to scatter. 736

Berlekamp, Lo, and Wang's assessment of this passage is based on the *Tansūqnāma*'s use of the phrase "*rūḥ ḥayawāni*" (animal spirit) and depiction of its origin in relationship to Galenic-

<sup>&</sup>lt;sup>735</sup> Vivienne Lo and Wang Yidan, "Blood or *Qi* Circulation? On the Nature of Authority in Rashid al-Din's Tanksuqnama (The Treasure Book of the Ilkhan on Chinese Science and Techniques)," in *Rashid al-Din: Agent and Mediator of Cultural Exchanges in Ilkhanid Iran*, Anna Aksoy, Charles Burnett, and Ronit Yoeli-Tlalim, eds. London: University of London Press. 2013:127-172, 158.

<sup>&</sup>lt;sup>736</sup> Translation from Lo and Wang 2018:299, original, in its entirety: Hamadani, *Tansuqnama*, 126-130

seeming blood and vapor. They translate rūh hayawāni (correctly) as "animal spirit" throughout most of their works, but Lo and Wang first introduce the concept with the term "soul" in Chasing the Vermillion Bird, which is misleading in a fourteenth-century Islamic medical context.<sup>737</sup> Lo and Wang assert that the Persian text imposes a Western-derived origin story for blood production in the liver onto the description of the dissection image, the idea of which, according to them, "is not contained in the original Chinese text." This assertion has merit, which I will address below, but is also problematic, in part, because we do not know what the "original Chinese text" precisely was, or what it may have said. Lo and Wang assert that, because the dissection image used in conjunction with this section of the *Tansūqnāma* also appears in the Xuanmen Maijue Neizhao tu (Methods of Diagnosing and Treating Diseases through Viscera), the *Tansūqnāma* passage must be meant as a translation or interpretation of this text.<sup>739</sup> This sourcing may or may not be the case, as tu images were reproduced and widely recirculated in multiple, different books. Imagining, for a moment, that the passage in the *Tansūqnāma* does correspond to this or some other specific work, we still do not know if this passage was strictly a translation or intended as a commentary. Medical commentaries differ from strict translations with the inclusion of explanations and analysis that connect and synthesize ideas, which is especially important in a teaching text. Rashīd al-Dīn's team identifies the passage as engaging the work of Wang Shuhe, which current scholarship on the *Tansūqnāma* takes to be a misunderstanding likely imported from his Chinese sources. Whatever the case, no passage from an original has been offered as the verified source text for this passage, so the assertion that it is an obfuscated translation is difficult to support.

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<sup>&</sup>lt;sup>737</sup> Lo and Wang 2018:299

<sup>&</sup>lt;sup>738</sup> Ibid 300

<sup>739</sup> Lo and Wang 2018: 299

Lo and Wang write that:

"the introduction of the idea that the production of blood at the liver stimulates a ripening process which in turn generates vapour to the lungs has a decidedly Greco-Roman-Arabic ring to it. For Galen the liver was central in haematopoiesis and the origin of a venous system which transported nourishment around the body."<sup>740</sup>

Galenic medicine is characterized by the localization of bodily, cognitive, and psychological functions and processes with specific anatomical sites in a way that does not correspond with the physiological priorities of traditional Chinese mappings of the body. Many functions and processes overlap, but they are named, understood and localized within the body differently in Galenic and Chinese sources. The Galenic model at stake in this passage associated three locations in the body with the functions of the Platonic tripartite soul. The brain, heart, and liver were understood as epicenters for the rational, spirited, and appetitive functions of each respective soul-part, each connecting to the body as a whole through the nerves (brain), arteries (heart), and veins (liver).<sup>741</sup>

Galen imagined the liver as the center of a root system that nourished the body and produced blood.<sup>742</sup> The liver was the seat of the natural, appetitive spirit (*pneuma physikon*), though this aspect of the spirit system was emphasized more by physicians following Galen than in his own

<sup>740</sup> Lo and Wang 2018:299

<sup>742</sup> Ibid 341

<sup>&</sup>lt;sup>741</sup> Merk Schiefsky, "Galen and the Tripartite Soul," in *Plato and the Divided Self*, Rachel Barney, Tad Brennon, and Charles Brittain, eds. Cambridge: Cambridge University Press, 2012:334,338.

writings. The vital spirit (*pneuma zoticon*) resident in the heart was produced by the mixing of the *pneuma* of inhaled air with blood produced by the liver, and this vital spirit traveled to the *rete mirabile* and brain, where it combined with *pneuma* inhaled primarily through the nose and was transformed into the soulful or psychic spirit (*pneuma psychikon*). The "subtle matter" of these spirits moved through the nerves, arteries and veins in a mixture with blood and other fluids as a rarefied vapor. The subtle matter"

It is very important to recognize that the passage from the *Tansūqnāma* in question is not about the production and circulation of blood through the body, it is about the origin of "animal spirit" and its circuit through the "vessel passageways." Blood is only mentioned in the passage as an ingredient of animal spirit, and its production is only described within this context. If Rashīd al-Dīn is, in fact, responding in some way to Wang Shuhe or his commentators, as he claims, the physiology described in this passage is consistent with statements in the *Mai Jing*, beginning with passages about the heart. Summarizing traditional medical texts about the heart, the *Mai Jing* states: "that which it stores is spirit," and "the heart stores the vessels, and it is the vessels that house the spirit."<sup>745</sup> The *Tansūqnāma* passage describes the genesis of animal spirit and its transit through the vessels. But, the nature of the spirit in question requires more nuanced consideration. Lo and Wang identify it as the "animal spirit" of Latinized Greek medicine, though Rashīd al-Dīn has identified it as a component of Wang Shuhe's work. The correct identification of the spirit that is being depicted here has important implications for Lo and

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<sup>&</sup>lt;sup>743</sup> Owsei Temkin, *The Double Face of Janus and Other Essays in the History of Medicine*. Baltimore: Johns Hopkins University Press, 2006:156.

<sup>&</sup>lt;sup>744</sup> James J. Bono, "Medical Spirits and the Medieval Language of Life," in *Traditio* Vol. 40 (1984):97.

<sup>&</sup>lt;sup>745</sup> Wang Shu-he. *The Pulse Classic: A Translation of the Mai Jing*, Yang Shou-zhong, trans. Boulder: Blue Poppy Press, [2nd cent. CE;1997] 2013:66, 69

Wang's assessment of Rashīd al-Dīn's motives as a translator, and for our understanding of the *Tansūqnāma* as an epistemic project.

Rashīd al-Dīn's manuscript team calls the "animal spirit" from the selected passage from the Tansūqnāma "rūḥ ḥayawāni." The term ḥayawāniyya is associated in medieval Islamicate medicine with the vital faculty (quwas or dunamis zotike) and vital spirit (al-rūḥ al-ḥayawāniyya) resident in the heart. Medical vocabulary from Greek sources was standardized into Arabic by Ḥunayn ibn Isḥāq and his "school of translators" in the ninth century. His al-Masā'il fi al-Tibb li-l-Muta'allimīn (Questions on Medicine for Students) deploys the translations "al-rūḥ al-ṭabī'iyya" for the natural spirit associated with the liver, "al-rūḥ al-ḥayawāniyya" for the vital spirit associated with the heart, and "al-rūḥ al-nafsāniyya" for the soulful or psychic spirit. About al-rūḥ al-ḥayawāniyya, ibn Isḥāq writes, "the vital spirit emanates from the heart, penetrates through the arteries into the whole body, and is servant to the vital [faculties] (al-qiwa al-ḥayawāniyya).

Galen's vital spirit of the heart, *pneuma zoticon*, entered Islamic medicine as *al-rūḥ al-ḥayawāniyya*. When Galen was translated from ibn Isḥāq's work into Latin, the term "*spiritus animale*" was adopted for the soulful or psychic spirit associated with the brain, not the heart, because the Latin word for soul is *anima*. In Arabic, this soulful or psychic spirit is *al-rūḥ al-*

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<sup>&</sup>lt;sup>746</sup> Nahyan Fancy, *Science and Religion in Mamluk Egypt: Ibn al-Nafis, Pulmonary Transit and Bodily Resurrection.* London: Routledge (2013):77.

<sup>&</sup>lt;sup>747</sup> Fancy 80

<sup>&</sup>lt;sup>748</sup> Ḥunayn Ibn Isḥāq, *Questions on Medicine for Scholars*, Paul Ghalioungui, trans. Cairo:Al-Ahram Center for scientific translations.1980.

<sup>&</sup>lt;sup>749</sup> Ibid 5

nafsāniyya. After Galen entered Latin through Arabic, Western translators mistakenly rendered the soulful or psychic spirit of the brain as "animal spirits" because of its resemblance to the Latin word for soul, anima, and a possible confusion with the Arabic source material. These words share deep roots, and are conceptually related, but this mistranslation is a source of enormous confusion because, in Arabic and Persian, it is the vital spirit in the heart, not the soulful spirit in the brain, that is called "animal spirit."

If "animal spirit" entered the West through confusion over the Latin word for soul, how did "animal spirit" enter Arabic for the vital spirit of the heart? Translators from Greek into Arabic have been accused of mistaking the word for vital, zootikos, with the word for animal-like, zoodes, but Fancy suggests that hayawāniyya was actually a reflection of the incorporation of the Aristotelian hierarchy of powers distinguishing plant, animal, and human. Another possible resonance between the concept of vitality and hayawāniyya for the translators could have been the relationship between the word for animal, عبون hayawān, and عبون hayawān is a being animated by hayát.

Lo and Wang make a profound set of mistakes in their assessment of the meaning of  $r\bar{u}h$   $hayaw\bar{a}n\bar{\imath}$  in Rashīd al-Dīn's text, and of how it was used in and developed within medieval Islamicate medicine. These errors have major implications for their interpretation of Rashīd al-Dīn's intentions, both within the passage in question and in the  $Tans\bar{u}qn\bar{a}ma$  as a whole. They write, "the key physiological terms concerned with spirits as they translated through Greek and Latin into late-medieval Persian were the rūh nafasānī (Vital Spirit), or rūh hayawānī (lit. Animal

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<sup>&</sup>lt;sup>750</sup> Fancy 155

<sup>751</sup> Steinglass 436

Spirit), and sometimes rūh tabī'ī (Natural Spirit)...These entities formed the physiological counterpart of the tripartite soul."<sup>752</sup>

First, translations of Galen did not enter Arabic and Persian from Latin, as Lo and Wang assert above, rather, Latin was the beneficiary of the Islamicate translation movement. This is a profound error with enormous ramifications for global medical history. It characterizes Rashīd al-Dīn and the medical tradition he is working within and that he specifically invokes in his introduction to the *Tansūqnāma* as something other than what he was, and something other than what it was. Islamic medicine was not a backwater recipient of bastardized Latin. In his introduction to the *Tansūqnāma*, Rashīd al-Dīn compares himself to his namesake, Hārūn al-Rashīd, the Abbasid caliph, founder of the House of Wisdom, and patron of the Greek translation movement in eighth-ninth-century Baghdad. I argue, below, that in the selected passage he lives up to that goal by sponsoring the successful translation of the Chinese medical concept of *spirit* or *animal spirit* into Western languages for, apparently, the first time. Given the *Tansuqnama*'s apparent introduction of the taiji, medical concepts of yin and yang, the Five Phases, zang fu organ theory, and innumerable other components of Chinese medicine and cosmology in a substantive, organized format inspired by state-of-the-art transregional pedagogy, it is hard to see this project as a failure. If it is being assessed as a failure, we need to clarify our metrics for success.

The assessments by Berlekamp, Lo, and Wang of the project as a "failure" of cultural translation or of Rashīd al-Dīn as a fearful source of misrepresentations mischaracterize the nature of

<sup>&</sup>lt;sup>752</sup> Lo and Wang 2018:300

Islamicate medical translation and Rashīd al-Dīn's role within that trajectory. His rhetorical deployment of his namesake in the introduction makes plain his intention to incorporate the knowledge of the East into the Islamicate purview, just as Greek, Persian, and Indian science had entered Arabic. It also implied the "rightness" of this intellectual trajectory, "al-Rashīd" (راشد) meaning, "rightly guided." The spiritual authority implied by this rhetorical device was backed by, and implied, a significant degree of earthly power which is evident in his position at court, land holdings, and enormous wealth. In all likelihood, it was this earthly power that motivated his enemies, not how he may or may not have represented a Chinese medical diagram.

The second major error in the passage from Lo and Wang quoted above is their misidentification of the animal spirit of medieval Islamicate medicine. Unfortunately, they have swapped the Latin spirit associated with the brain and the Islamicate spirit associated with the heart, reversing their origins and functions, and applied an analysis of the wrong spirit to Rashīd al-Dīn's terminology. The "Graeco-Roman Islamic" map they project onto the passage of the *Tansūqnāma* in question is backwards and upside down. If Rashīd al-Dīn had made a similar error, no doubt it would be called intentional undermining or sabotage by the authors, as every point of concern they find in the manuscript is framed by their analysis. Here, it is obviously an innocent mistake. They write, "For Galen the liver created venous blood that nourished the body. Some blood ascended to the right ventricle of the heart. Crossing into the warm environment of the left ventricle the blood vitalised by mixing with air. The resulting Vital Spirits ascended to a place called the rete mirabile where, after a further refinement, they transformed into the Psychic or Animal Spirit." Sadly, this is only the case via the Latin. In the Arabic and Persian medicine of

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<sup>&</sup>lt;sup>753</sup> Lo and Wang 2018:300

Rashīd al-Dīn's translators, the animal spirit was anchored in the heart, not the brain. Its physiology and functions are dramatically different than what is presented here, and Lo and Wang base their evaluation of Rashīd al-Dīn largely on his use of this term, which they fundamentally misconstrue. Poignantly, they add, about the spirit of the heart which they have not recognized as the Islamicate  $r\bar{u}h$   $hayaw\bar{a}n\bar{i}$ , "Galen speaks of the Vital Spirits which moved through the moving vessels (the arteries) and animated the sensory body. These were perhaps the same moving vessels that we find in the opening sentences of the explanation of the Chart of the Heart Connections in Tansūqnāma." Indeed.

### Lo and Wang continue:

"By late antiquity Galen's ideas crystallised into three different systems that had their own kinds of spirits. Arabs of late medieval times, such as Ibn Sīnā (Avicenna, c. 980), also imagined three spirits in the body. Galen wasn't talking about real animals inhabiting the body such as we find in the Chinese alchemical landscape, his Animal Spirit was a sort of physiological vitality. Tansūqnāma uses the term rūh hayawānī in what therefore emerges as a very Galenic, Persian, Chinese medical text" 754

In point of fact, Ibn Sīnā was not an Arab, and Galen did not discuss "animal spirits." Animal spirit first arises within the Islamicate translation movement as a term for the vital spirit associated with the heart and later, in the Latin West, through mistranslations about the brain. Galen has little to do with it.

<sup>754</sup> Lo and Wang 2018:300-301

Berlekamp ultimately claims that the *Tansūqnāma* "failed" because Islamicate medicine was Galenic, and Chinese medicine was not.<sup>755</sup> In characterizing the Islamicate medical tradition as Galenic, which is a large part of Berlekamp's claim to "incompatible knowledge," she elides the nature of what actually occurred across the expanse of the Islamicate world as physicians not only translated but engaged with, argued with, and oftentimes dismissed Galen. We elide the reality that the translation movement also incorporated texts from Africa, South Asia, and the Far East, into a cosmopolitan set of interacting traditions we now think of as the Islamic system. Our categories fail to describe it.

Islamicate medicine was globalized before Rashīd al-Dīn set out to draw Chinese texts so directly into the fold. Thinking of Islamicate medicine as simply, "Galenic," erases the agency of generations of non-European physicians who innovated theories and practices that radically shifted the nature of human therapeutics. Medieval Muslim medicine was not a Europe-to-Europe, empty conduit of Greek knowledge, or a Galenic placeholder for future generations. It was a generative, inventive, vital network of intellectual and clinical practices that could be described as Egyptian, Gondeshapurian, Shushrutian, ibn Ishaqian, Avicennian and Galenic. The translation movement was just that, the globalized movement and interaction of multiple centers, articulated by multiple minds.

Setting aside the assessments of Berlekamp, Lo, and Wang, how might Rashīd al-Dīn and his team have approached the passage from the *Tansūqnāma* given his stated trajectory within the ethos of the translation movement, if he was unburdened by hidden motives? Is there a spirit

755 Berlekamp 229

described in Chinese medical texts, including the *Mai Jing*, that corresponds to the one described in the passage from the *Tansūqnāma*? If so, why would Rashīd al-Dīn's team assign it a standardized, familiar name, *animal spirit*, in the Persian text? If we briefly set Lo and Wang's analysis aside, we can examine this passage from the standpoint of Wang Shuhe, his commentators, and the medical works with which they were in conversation and attempt to enter into Rashīd al-Dīn's decisions about the text.

Although blood is produced in the Chinese physiological model through collaboration between the spleen, lung, and heart, it is ultimately "stored and regulated" by the liver. The During movement and activity, blood moves within the channels, but it returns to the liver when a person is at rest. All blood used within the body emerges, then, from the liver, as needed, in connection to movement. The *Mai Jing* states that "the liver stores blood and blood houses ethereal soul (hun)." The "ethereal soul," or  $h\acute{u}n$  (建) is the yang aspect of a soul pair that leaves the body at the time of death and ascends to heaven, while the  $p\grave{o}$  (健), or corporeal soul, is the yin aspect of the pair that remains associated with the body on earth. The  $p\grave{o}$  is that aspect of the soul that Chinese cosmology roots in the Big Dipper, as a guide to our physical senses.

The Su Wen states that the spirits associated with the body are five in number and are stored in the zang organs, with the po residing in the lung, the hún in the liver, the shén ( $\bar{n}$ ) in the heart,

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<sup>&</sup>lt;sup>756</sup> Nigel Wiseman and Andrew Ellis, *Fundamentals of Chinese Medicine*. Brookline: Paradigm Publications, 1996:21.

<sup>&</sup>lt;sup>757</sup> From Wang Bing's annotated *Inner Canon*, in Wiseman and Ellis 21

<sup>&</sup>lt;sup>758</sup> Wang Shuhe 64.

and the zhi ( $\dot{\Xi}$ ) and yi ( $\dot{\Xi}$ ) in the kidney and spleen, respectively. <sup>759</sup> The Tang Confucian scholar, Kong Yingda, described the development and regulation of human life from embryonic genesis through adulthood in relationship to the functions of the po and hún:

"In the life of human beings; first change and transformation becomes the bodily form, the power of the bodily form is called the corporal-soul, inherent in the corporal-soul there is yang qi, the spirit of qi is called the ethereal-soul. The ethereal and corporal souls, these are the names of the spiritual powers. After birth, the activity of one's ears and eyes, consciousness, and arms and legs—these are the power of the corporal soul. As for the gradually increasing perception of one's essence—spirit and natural understanding—these are the spirit of qi."<sup>760</sup>

Needham and Lu elaborate on the role of the po and hún in fetal development and human growth. They write, "when a foetus begins to develop, it is (due to) the pho." (When this soul has given it a form) then comes the Yang part, called hun." Essence, ( $j\bar{\imath}ng$  精) then gives "strength to these (two souls), and so they acquire the vitality, animation and good cheer (shuang) of these essences. Thus eventually there arises spirituality and intelligence (shen ming 神明) Stored within the body in the zang organs, with the heart and its vessels retaining a special overarching role, the spirits relate to the mental and emotional aspects of human functioning, but also organize and animate embodied physical life. Returning to the description of the animal

75

<sup>&</sup>lt;sup>759</sup> Huang Di Nei Jing Su Wen, Vol. 1. Paul Unschuld, Hermann Tessenow, and Zheng Jinsheng, trans.Berkeley: University of California Press, 2011: 409.

 $<sup>^{760}</sup>$  Kong Yingda quoted in Zhang Jingyue, *Leijing* (*Categories of the Canons*), fascicle 3, chapter 14, in Minh Khai Mai-Thi, "The Physiology of the Mind in Chinese Medicine: Interpretation of the "Five Spirits"  $\pm$  神 in Zhang Jingyue's Categories of the Canons (1624)," M.A. Thesis, (University of Oslo, 2017).  $^{761}$   $p\grave{o}$ 

spirit, the heart, and its vessels in the *Tansūqnāma*, do we see the Chinese model of embodied spirit in the words chosen by Rashīd al-Dīn's team? Unequivocally, yes. The *Tansūqnāma*, once again, reads:

"On the explanation of the heart and its arteries, including all of its vessels, known as the 'Chart of the Heart Connections.' From the Heart there is a vessel that connects to all the vessel passageways of the organs. Now we will narrate how the animal soul is born, and also how it pours into the organs. According to what they say, the blood fluids are born in the Liver and, moreover, when it all ripens, there is a kind of vapour that flows into the Heart, and is nurtured there, changing into the animal soul."

Thus far, there is an obvious correspondence between the description presented in the *Tansūqnāma* and the model of embodied spirit in the *Mai Jing*, though not an exact, one-to-one translation. The liver and the heart are identified as primary agents of animal spirit, and the next part of the passage discusses the role of the lungs. Regarding the lungs (and their *zang fu* pairing with the large intestine), the *Mai Jing* states, "their spirit is the corporeal soul (po)...That which they nourish is the skin and hair," and "when the corporeal soul (po) is gone together with the skin and hair, the lungs are already dead." The *Tansūqnāma* continues:

"When one breathes the clear air into the Lung, then from the Lung the clear air arrives at the Heart. When the clear air from the Lungs arrives at the Heart, it fills it with this animal soul through the vessels to all the organs and to the extremities, and all the bones are filled with this animal soul. In this way when the animal soul goes quietly it is

229

<sup>&</sup>lt;sup>762</sup> Translation from Lo and Wang 2018:299, *Tansugnama* Book 1: Chapter 2. Section 2

<sup>&</sup>lt;sup>763</sup> Wang Shuhe 78, 261

without illness and its nature does not change, and maintains that equilibrium, the organs are also healthy without illness; whenever this animal soul changes for the weaker or its nature changes, all the organs will be harmed by this."764

The difference between life and death in Chinese medicine is the presence or absence of certain aspects of spirit. The blood stored in the liver, which carries with it its stored hún, as "a kind of vapour that flows into the Heart, and is nurtured there," where it becomes  $r\bar{u}h$  hayawāni. Next, the lung, which stores the corporeal soul, the po, carries "clear air" to the heart, according to the translation of Lo and Wang. 765 The literal meaning of the text actually reads, "inhaled breeze" نسيم مستشق), which, though a direct translation of *pneuma*, from the Greek, has been rendered as "clear air" perhaps for its likeness to qi ( $\leq$ ). Lo and Wang write that, "the ideas alluded to by the text in both the Chinese Xuanmen maijue neizhao tu," another text where the dissection image appears, and the *Tansūqnāma*, <sup>766</sup> "have some similarities if we loosely equate the passage of clear air with the movement of Qi described in the Chinese text."<sup>767</sup> A primary meaning of the word qi is "air," so the equation is rather direct and not very loose, from the standpoint of translation. The *Tansūqnāma* passage continues, "from the lung, with the heart, this breeze can transmit that spirit within the channel to all the parts."<sup>768</sup> Distributed throughout the body through "مجراى," a navigational path across a waterway, or channel, the rūh hayawāni becomes responsible for movement and vitality, and acts as a sign of vitality and life.

<sup>&</sup>lt;sup>764</sup> Translation from Lo and Wang 2018:299

<sup>&</sup>lt;sup>765</sup> Wiseman and Feng 100

<sup>&</sup>lt;sup>766</sup> Which they call a "Persian interpretation"

<sup>&</sup>lt;sup>767</sup> Lo and Wang 2018:299

<sup>768</sup> از ریه بقلب این نسیم ان روح متواند را در این مجرای تمام اعضا می فرستد" 230

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